ORDER NO. AVS9706030A8

Service Manual

Combination Camera

WV-CS600A/WV-CS604E/WV-CST600

Please file and use this manual together with the service manual for the Model No. WV-CSR600, order NO. AVS9703018C8.

SPECIFICATIONS

Combination Camera

Power Source :	230 V AC, 50Hz for WV-CS600A/WV-CST600, 24V AC, 50 Hz for WV-CS604E
Power Consumption :	16W
Ambient Operating Temperature :	–10°C - +50°C
Dimensions :	130 (D) x 191 (H) mm for WV-CS600A/WV-CS604E 130 (D) x 195 (H) mm for WV-CST600
Weight :	Approx. 2 kg

Camera

Pick-up Device :	1/3” CCD with 752 (H) x 582 (V) pixels for WV-CS600A/WV-CS604E 1/4” CCD with 752 (H) x 582 (V) pixels for WV-CST600
Synchronization :	Internal/Line-lock/Multiplexed/Vertical Drive (VD2)
Horizontal Scanning Frequency :	15.625 KHz
Vertical Scanning Frequency :	50 Hz
Video Output :	1.0 V[p-p] PAL composite/75 Ω
Horizontal Resolution :	More than 480 lines at centre
Vertical Resolution :	More than 400 lines at centre
Signal-to-noise Ratio :	48 dB (AGC OFF, weight on)
Minimum Illumination :	3 lx (0.3 footcandle) for WV-CS600A/WV-CS604E 6 lx (0.6 footcandle) for WV-CST600
Zoom Speed :	Approx. 6 s (TELE/ WIDE) in Manual mode
Focus Speed :	Approx. 5 s (FAR/NEAR) in Manual mode
Iris :	Automatic (Open / Close is possible)/Manual

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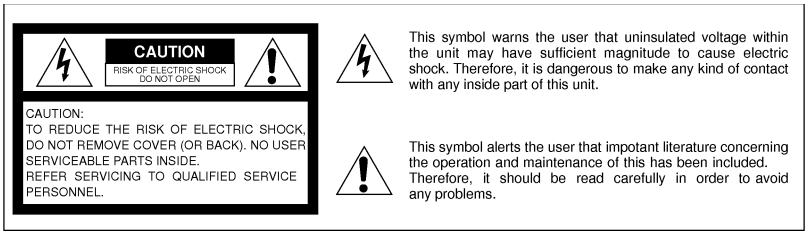
⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.


CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN
CAUTION:
TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.
This symbol warns the user that uninsulated voltage within the unit may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any inside part of this unit.
This symbol alerts the user that impotant literature concerning the operation and maintenance of this has been included. Therefore, it should be read carefully in order to avoid any problems.

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are indicated by the "⚠" mark on the schematic diagram and the replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards.
Do not modify the original design without permission of manufacture.

Maximum Aperture Ratio :	1 : 1.2 (WIDE) - 1.9 (TELE) for WV-CS600A/WV-CS604E 1 : 1.7 (WIDE) - 2.5 (TELE) for WV-CST600
Focal Length :	5 - 50 mm for WV-CS600A/WV-CS604E, 6.5 - 65 mm for WV-CST600
Electronic Shutter :	1/50 (OFF), 1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000
Back Light Compensation :	Normal/Automatic/Preset mode
Angular Field of View :	
Horizontal :	5.2° - 52.3° for WV-CS600A/WV-CS604E, 3.3° - 32.1° for WV-CST600
Vertical :	4.0° - 39.7° for WV-CS600A/WV-CS604E, 2.4° - 24.0° for WV-CST600
Zoom Ratio :	x 10
Iris Range :	F1.2 - 22, CLOSE for WV-CS600A/WV-CS604E, F1.7 - 22, CLOSE for WV-CST600

Pan / Tilt

Panning Range :	360° Endless
Panning Angle Setting :	Possible (in Auto-Pan mode)
Panning mode :	Manual/Sequential Position/Sort Position/Auto Pan
Panning Speed :	Manual : Approx. 3°/s - 120°/s eight steps Sequence Position : Maximum approx. 240°/s
Tilting Range :	0 - 90°
Tilting Mode :	Manual/Sequential Position/Sort Position
Tilting Speed :	Manual : Approx. 1.5°/s - 60°/s. eight steps Sequential Position : Maximum approx. 120°/s
Controls :	Pan/Tilt, Lens, 64 Preset Positions, Home Position

Weights and dimensions indicated are approximate.
Specifications are subject to change without notice.

ACCESSORIES

Camera Mounting Angle . . . . . 1 pc.
Camera Fixing Screw . . . . . 1 pc.
Connector (for WV-CS604E) . . . . . 1 pc.
Decoration Cover . . . . . 1 pc.

OPTIONAL ACCESSORIES

Dome Cover (Smoked type) WV-CS1S
Ceiling Mount Bracket WV-Q105E/WV-Q106E/WV-Q107E
Wall Mount Bracket WV-Q108E

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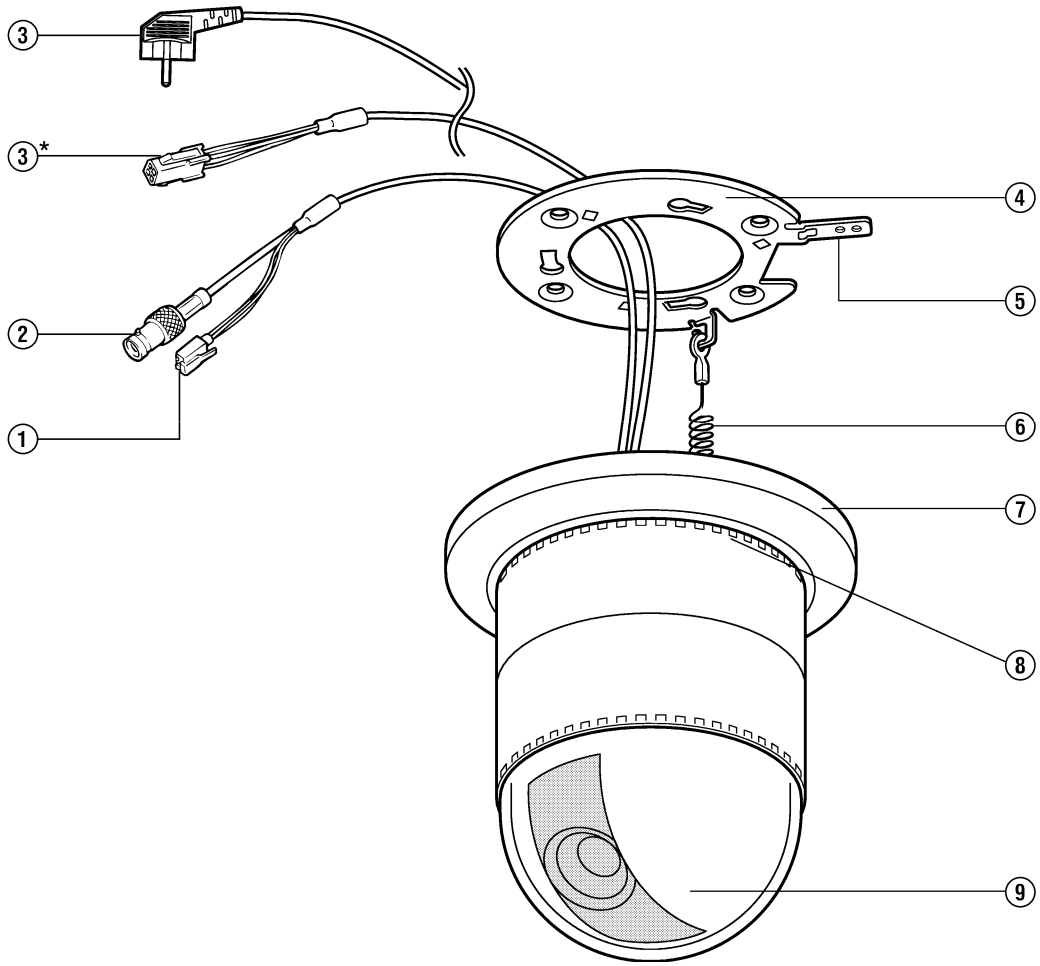
This service manual describes difference from the WV-CSR600.

CONSTRUCTION



(1) Data Cable (only for WV-CSR600)

(2) Video Output Connector

(3) Power Cable for WV-CS600A, WV-CSR600, WV-CST600

(3*) Power Cable for WV-CS604E

(4) Camera Mounting Angle

(5) Panning Start Point

(6) Fall Prevention Wire

(7) Decoration Cover

(8) Cooling Holes

(9) Dome Cover

INSTALLATION

Precaution:

The following installations should be made by qualified service personnel or system installers.

Setting the camera switches (only for WV-CSR600)

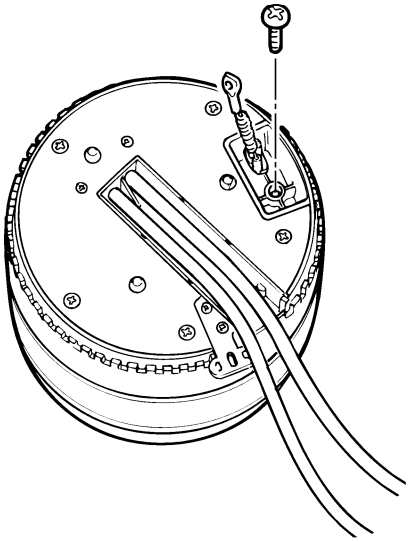
- To reset the communication parameters to the factory preset values, for example, when operating multiple cameras in a daisy chain connection, set the switches inside the camera as shown in the table below.

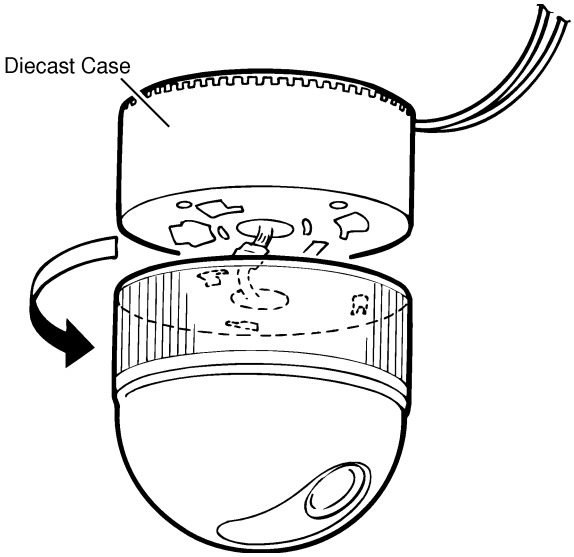
1. Disassemble the camera

Confirm the power is turned off.

Remove the screw from inside the hole for the fall prevention wire. Hold the diecast case containing the camera and rotate it to the left as shown below.

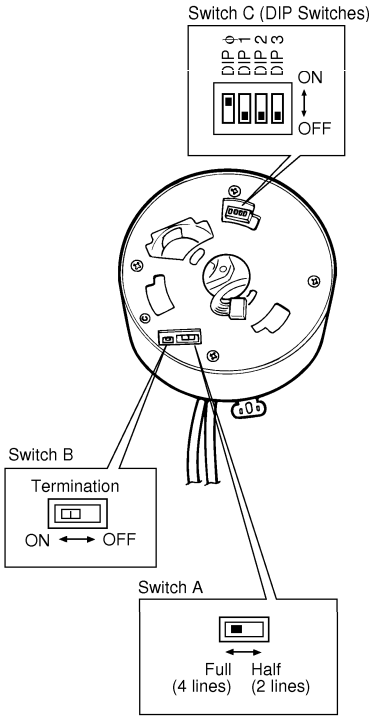
Note: Setting of switches while the power is on may cause a malfunction. Make sure the power is turned off before setting the switches.





2. Setting the switches

Set the switches as follows:



Switch A: Full duplex (four lines)/Half duplex (two lines) switch

Switch B: Termination ON/OFF switch

Switch C: Dip switches (become effective when the power is turned on)

Initialization of soft-ware communication parameters	DIP 3	OFF	Normal Setting
		ON	Initial Settings

Notes:

- Select OFF after resetting the parameters by selecting ON.
- The factory settings is OFF.

	DIP 1	DIP 2	
Camera Unit No.	OFF	OFF	01 - 32
	OFF	ON	33 - 64
	ON	OFF	65 - 96
	ON	ON	Inhibition

The factory settings for the dip switch 1 and 2 are both OFF.

PAL (CCIR) or NTSC (EIA)	DIP ϕ	OFF	NTSC (EIA)
		ON	PAL (CCIR)

Note: The dip switch ϕ is not for changing NTSC (EIA) to PAL (CCIR) or PAL (CCIR) to NTSC (EIA). This switch is set at factory. Do not change the setting of this switch. The factory setting is ON.

3. Assemble the camera

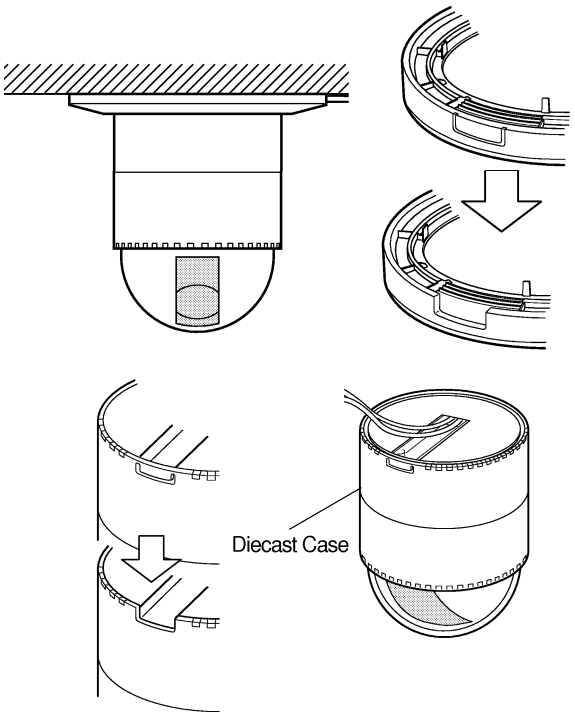
Reverse the disassembly procedure. Take care not to cut any cables.

Precautions:

1. The following installation work should be referred to qualified service personnel or system installers and must conform with local codes.
2. Be sure to select a ceiling board that is strong enough to support this camera.
3. To mount the camera on any other kind of ceiling, use the optional ceiling bracket WV-Q105E, WV-Q106E or WV-Q107E.
4. To mount the camera on the wall, use the optional wall mount bracket WV-Q108E.

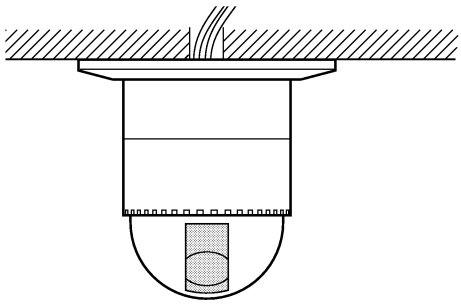
a. Sideway cable exit

Prepare a cutout in the diecast case and decoration cover as shown in the following drawing.

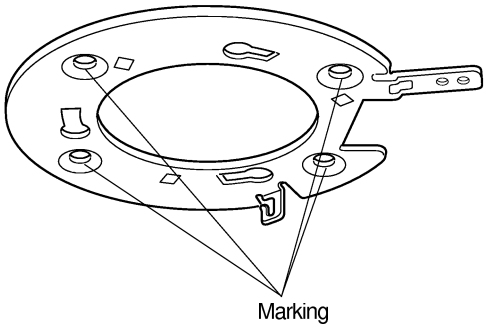


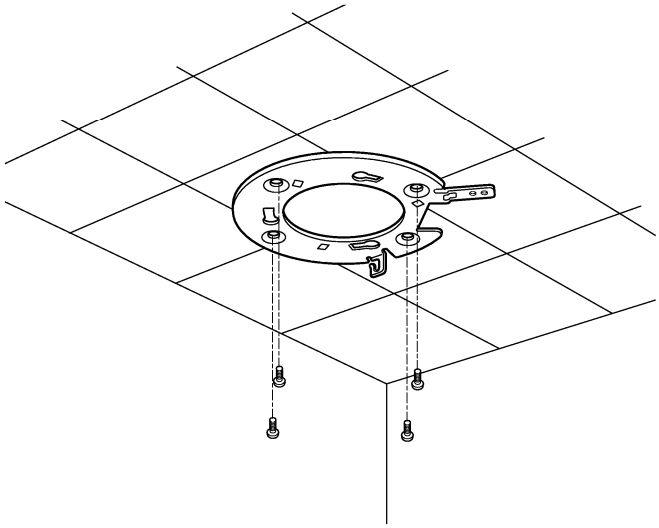
Note: Be sure to protect the video and power cables. Otherwise, the cut edges will damage the cables.

b. Top cable exit



1. Remove the mounting screw (M3) from the camera mounting angle (provided).
2. Mark the mounting holes on the ceiling, using the removed camera mounting angle as a template.



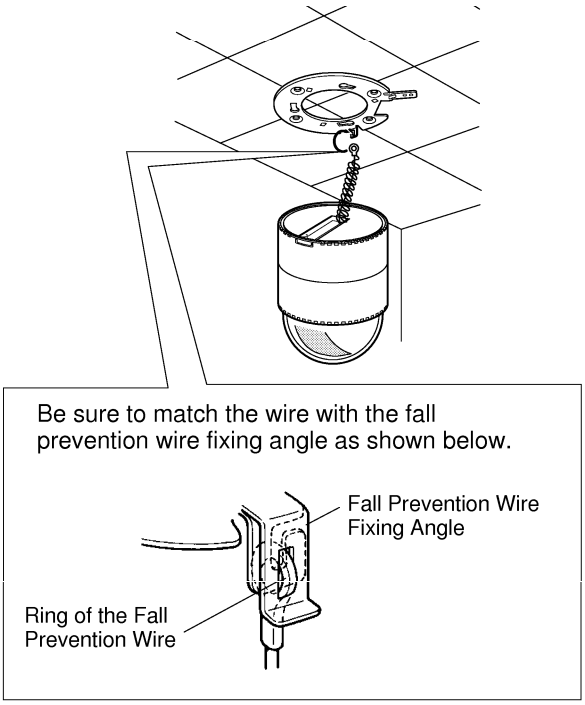


3. Fix the camera mounting angle to the ceiling with four screws (not provided).

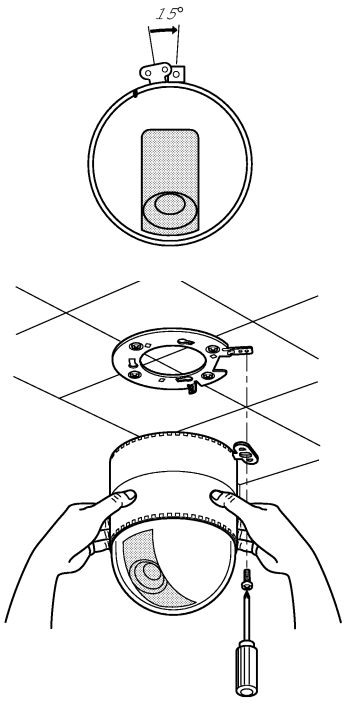
Caution:

The installation should be strong enough to support 4 times the total weight.

4. Hook the fall prevention wire on the camera mounting angle.


Be sure to match the wire with the fall prevention wire fixing angle as shown below.
Fall Prevention Wire Fixing Angle
Ring of the Fall Prevention Wire

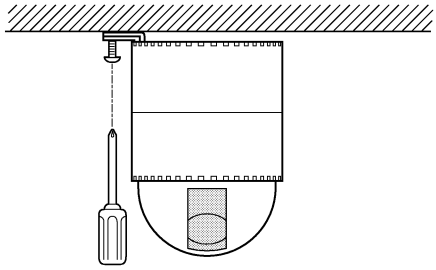
5. Mount the camera on the camera mounting angle and rotate the camera clockwise.



6. Tighten the fixing screw M3 (provided).

Notes :

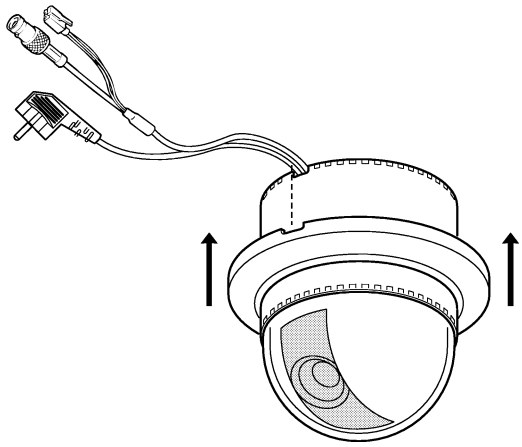
1. Tighten the camera fixing screw with a screwdriver.
2. Follow the instructions given here to ensure that the camera and camera mounting angle are installed safely.
3. When removing the camera from the camera mounting angle, loosen and press up the camera fixing screw (M3) by using a screwdriver.



7. Fix the decoration cover to the camera mounting angle.

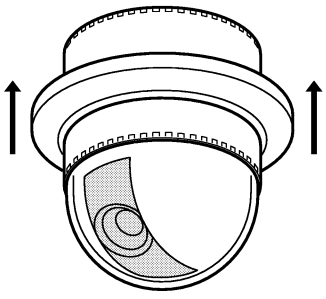
a. Sideway cable exit

Pass the cables through the cutout made in the diecast case and decoration cover (refer to item a, INSTALLATION).



b. Top cable exit

Push the decoration cover against the camera mounting angle.

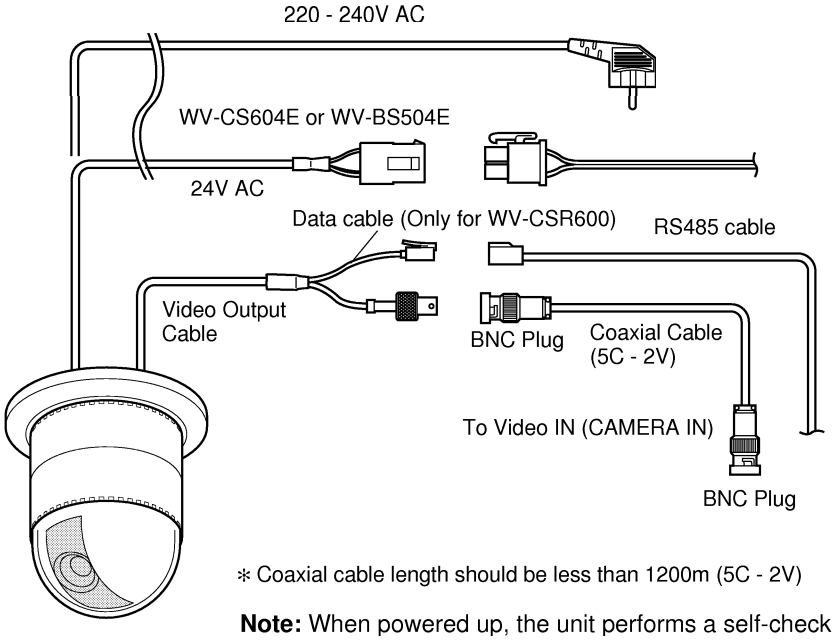


When using the optional bracket for mounting, refer to the Operating Instructions for the WV-Q105E, WV-Q106E, WV-Q107E or WV-Q108E.

CONNECTIONS

Precaution:

The following connections should be made by qualified service personnel or system installers.



* Coaxial cable length should be less than 1200m (5C - 2V)

Note: When powered up, the unit performs a self-check (including one panning, tilting, zooming and focusing operation).

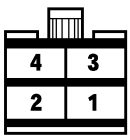
• Power supply connection

Recommended wire gauge sizes for 24V AC line.

Copper wire size (AWG)		#24 (0.22mm²)	#22 (0.33mm²)	#20 (0.52mm²)	#18 (0.83mm²)
Length of Cable (Approx.)	(m)	20	30	45	75
	(ft)	65	100	160	260

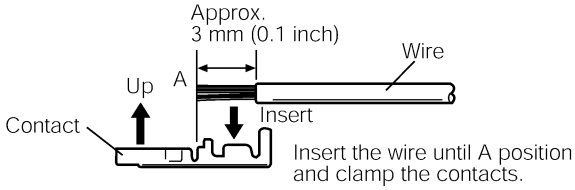
Accessory Connector Information

Pin No.	Power Source
1 :	24 V AC LIVE
2 :	24 V AC NEUTRAL
3 :	Ground
4 :	Not use



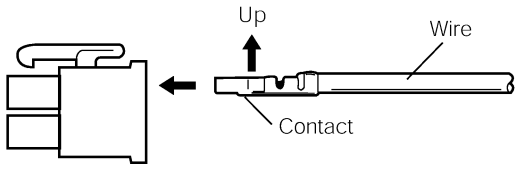
How to assemble the cable with the accessory connector

Strip back the cable jacket approx. 3 mm (0.1 inch) and separate the individual conductors.



Prepare the individual conductors for clamping. Use MOLEX band tool part number 57027-5000 (for UL-Style Cable UL1015) or 57026-5000 (for UL-Style UL-1007) for clamping the contacts.

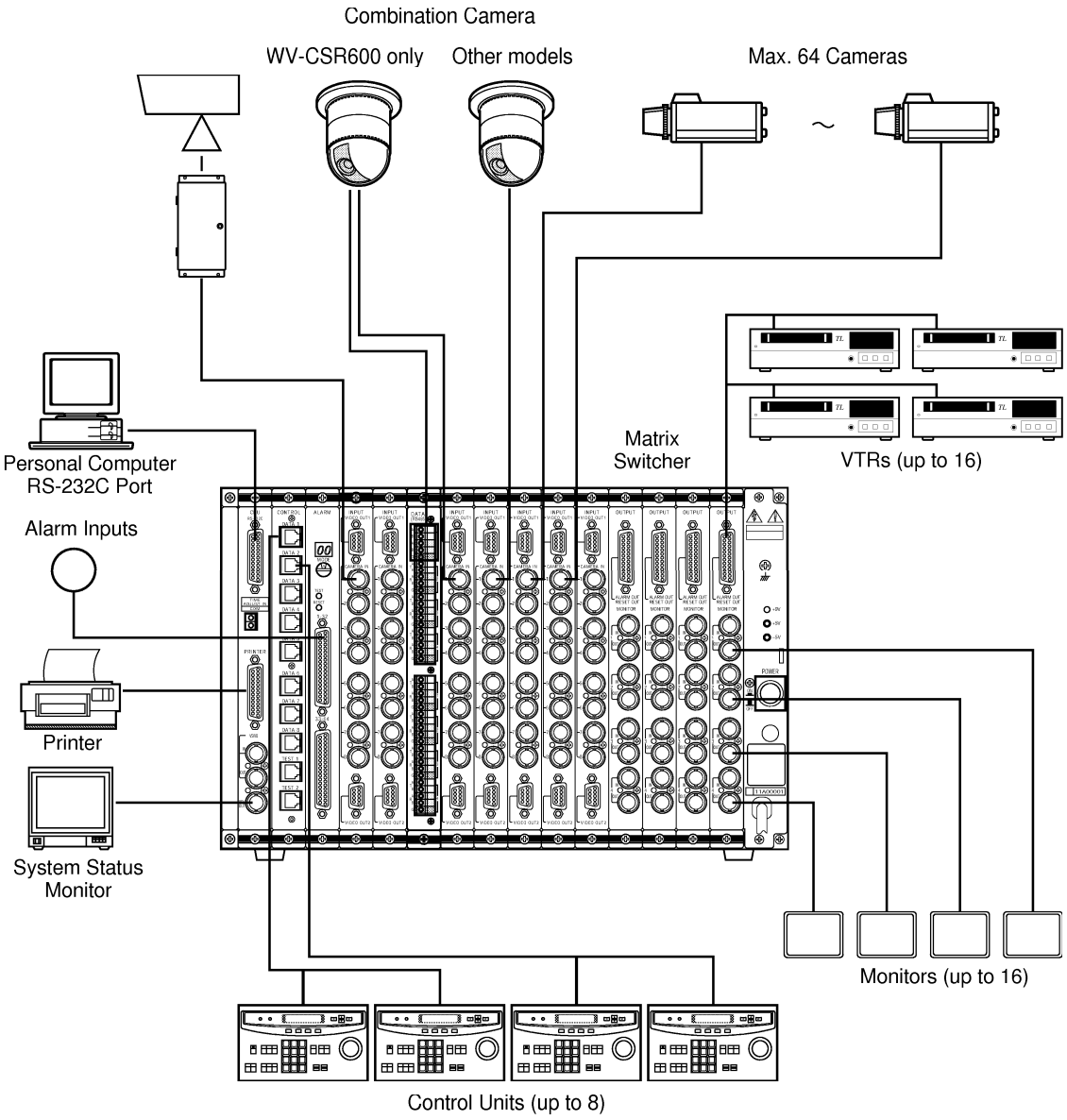
After clamping the contacts, push them into the proper holes in the accessory connector of this camera until they snap in place.



CAUTIONS

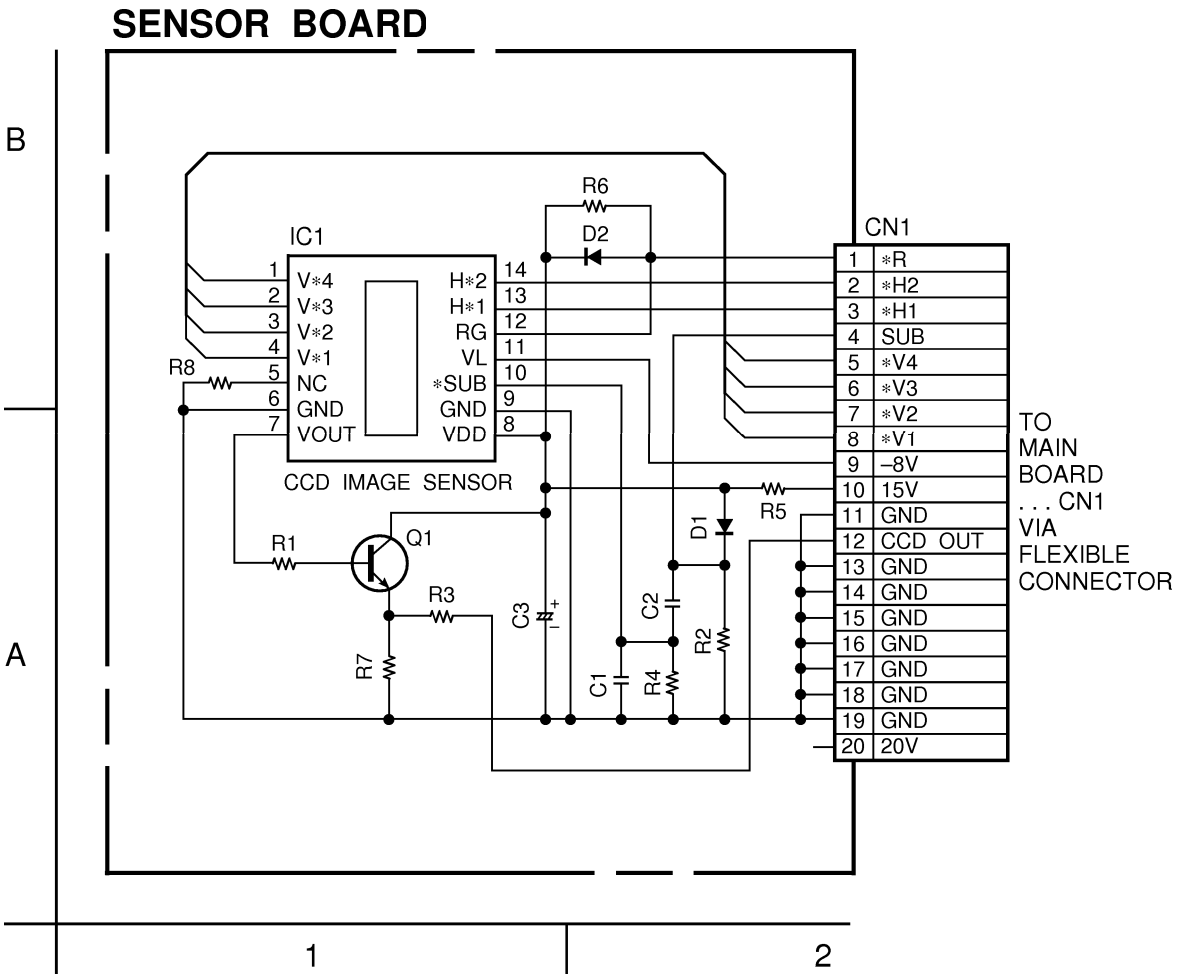
1. Shrinking the cable-entry seal is a one-time procedure. Do not shrink the cable-entry seal until it has been ascertained that the unit is functioning.
   CONNECT THIS TO 24V AC CLASS 2 POWER SUPPLY ONLY.
2. To prevent fire or electric shock hazard, the UL listed wire (VW-1, style 1007) should be used for the cable for 24V AC input terminals.

SYSTEM CONNECTIONS



Note: Eight cameras are maximum that can be connected with a data board even if the cameras are connected by the daisy chain connection.

SCHEMATIC DIAGRAM OF SENSOR BOARD FOR WV-CST600/G



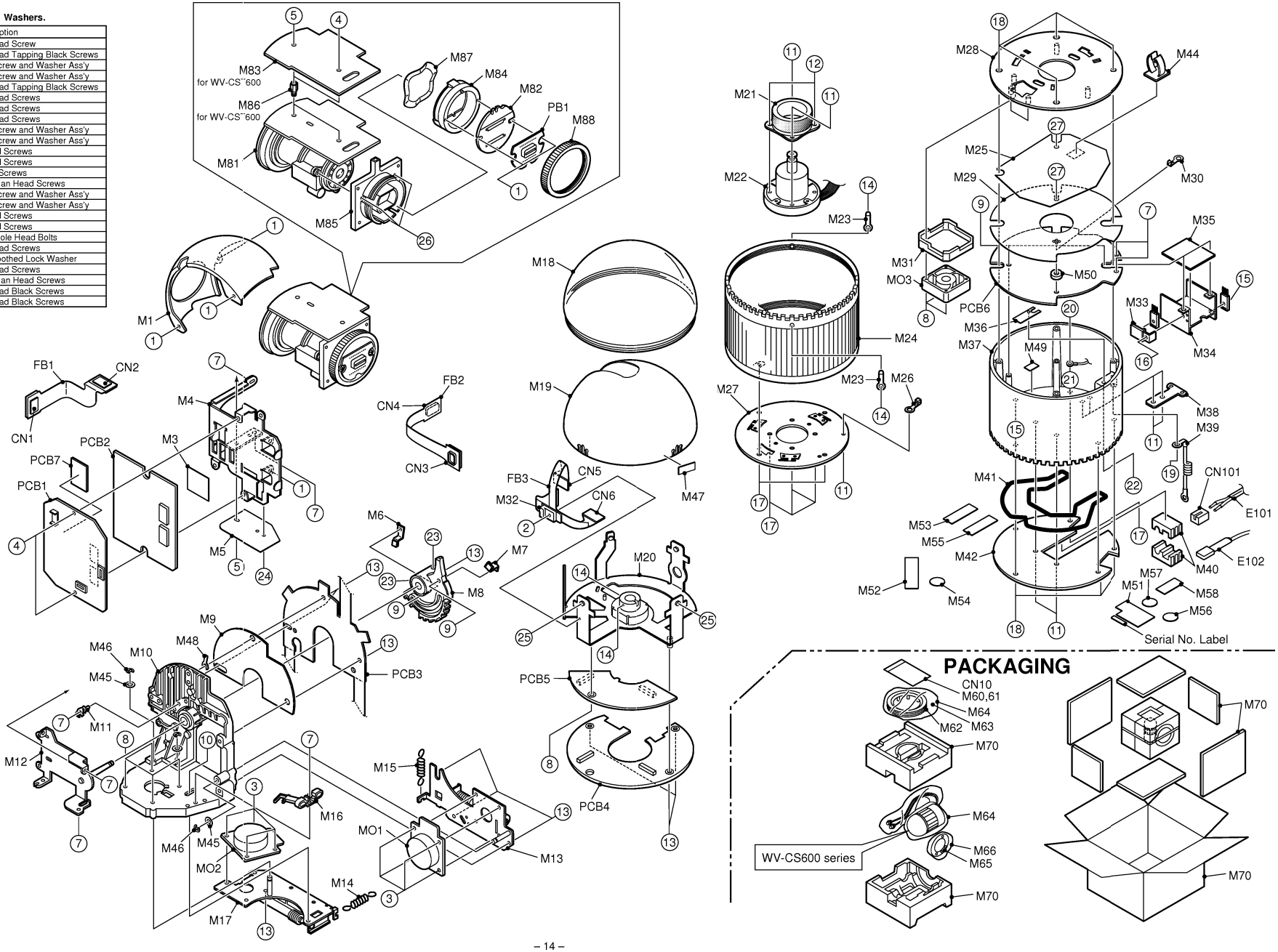
<Index>
Sensor Board

IC1 A1/B1
Q1 A1
D1 A2
D2 B2

EXPLODED VIEW

○ **Numbers show Screws and Washers.**

No.	Screws	Description
①	XSB2+4FX	Binding Head Screw
②	XTB2+4GFXK	Binding Head Tapping Black Screws
③	XYN2+J4FN	Machine Screw and Washer Ass'y
④	XYM2+J6FN	Machine Screw and Washer Ass'y
⑤	XTB2+6GFXK	Binding Head Tapping Black Screws
⑥	XS2+5FX	Binding Head Screws
⑦	XSB26+4FX	Binding Head Screws
⑧	XSB26+15FX	Binding Head Screws
⑨	XYN26+J6FN	Machine Screw and Washer Ass'y
⑩	XYN26+F15FN	Machine Screw and Washer Ass'y
⑪	XSS26+4FX	Flush Head Screws
⑫	XSS26+16FX	Flush Head Screws
⑬	YWV1EC0270A4	Cup Head Screws
⑭	XQN2+A4FN	Precision Pan Head Screws
⑮	XYN3+F8FX	Machine Screw and Washer Ass'y
⑯	XYN3+F12FX	Machine Screw and Washer Ass'y
⑰	XSS4+6FX	Flush Head Screws
⑱	XSS4+12FX	Flush Head Screws
⑲	XVE4A8FX	Hexagon Hole Head Bolts
⑳	XSB4+6FX	Binding Head Screws
㉑	XWC4BFX	External Toothed Lock Washer
㉒	XSB26+12FX	Binding Head Screws
㉓	XQN2+A8FN	Precision Pan Head Screws
㉔	XSB2+3FXK	Binding Head Black Screws
㉕	XSB3+4FXK	Binding Head Black Screws



PACKAGING

Printed in Japan
C-631 Ⓝ 5, 7, 23

ORDER NO. AVS9605167C8

Service Manual

Combination Camera

WV-CS600

SPECIFICATIONS

Combination Camera

Power Source :	220 - 240V AC, 50Hz 16W
Ambient Operating Temperature :	14°F - 122°F (–10°C - +50°C)
Dimensions :	130 (D) x 195 (H) mm
Weight :	2 kg

Camera

Pick-up Device :	1/3" CCD with 752 (H) x 582 (V) pixels
Synchronization :	Internal/Line-lock/VD2
Horizontal Scanning Frequency :	15.625 KHz
Vertical Scanning Frequency :	50.00 Hz
Video Output :	1.0 V[p-p] PAL composite/75 Ω
Horizontal Resolution :	More than 480 lines at centre
Vertical Resolution :	More than 400 lines at centre
Signal-to-noise :	48 dB (AGC OFF weight on)
Minimum Illumination :	3 lx
Zoom Speed :	Approx. 6 sec. (TELE/ WIDE) at Manual
Focus Speed :	Approx. 6 sec. (FAR/NEAR) at Manual
Iris :	Auto (Open / Close is possible)/MANUAL
Maximum Aperture Ratio :	1 : 1.2 (WIDE) - 1.9 (TELE)
Focal Length :	5 - 50 mm
Electronic Shutter :	1/50 (OFF), 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000
Back Light Compensation :	Normal/Automatic/Preset mode
Zoom Ratio :	10 times
Focus Ratio :	F1.2 - 22

Weight and dimensions indicated above are approximate.
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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

This symbol warns the user that uninsulated voltage within the unit may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any inside part of this unit.

This symbol alerts the user that impotant literature concerning the operation and maintenance of this has been included. Therefore, it should be read carefully in order to avoid any problems.

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are indicated by the "⚠" mark on the schematic diagram and the replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards.
Do not modify the original design without permission of manufacture.

Pan / Tilt

Panning Ratio :	Endless
Panning Angle Setting :	Possible (at Auto-Pan mode)
Panning mode :	Manual/Sequential Position/Sort Position/Auto Pan
Panning Speed :	Manual : Approx. 3°/sec., 24°/sec eight steps
	Sequence Position : Maximum approx. 240°/sec.
Tilting Ratio :	0 - 90°
Tilting Mode :	Manual/Sequential Position/Sort Position
Tilting Speed :	Manual : Approx. 1.5°/sec, 12°/sec. eight steps
	Sequential Position : Maximum approx 120°/sec.
Controls :	Pan/Tilt, Lens, 64 preset Position, Home Position

OPTIONAL ACCESSORIES

Ceiling Mount Bracket WV-Q105E/WV-Q106E/WV-Q107E
Wall Mount Bracket WV-Q108E
Dome Cover (Smoked type) WV-CS1S

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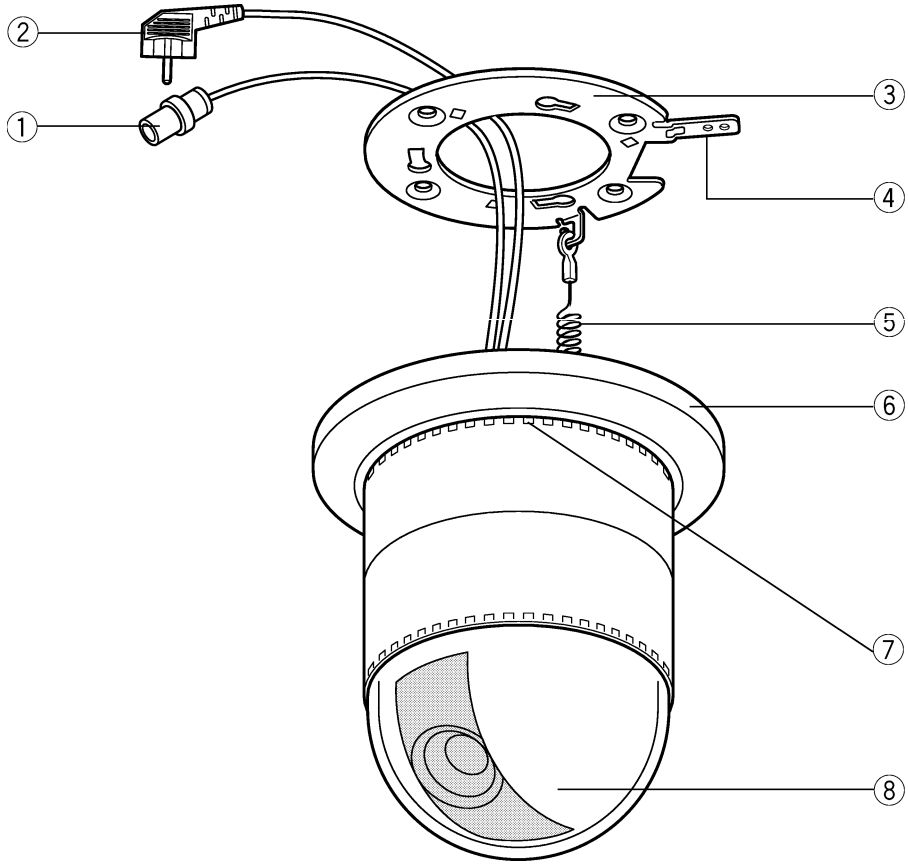
MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS



(1) Video Output Connector

(2) Power Cable

(3) Camera Mounting Angle

(4) Panning Start Point

(5) Fall Prevention Wire

(6) Decoration Cover

(7) Cooling Holes

(8) Dome Cover

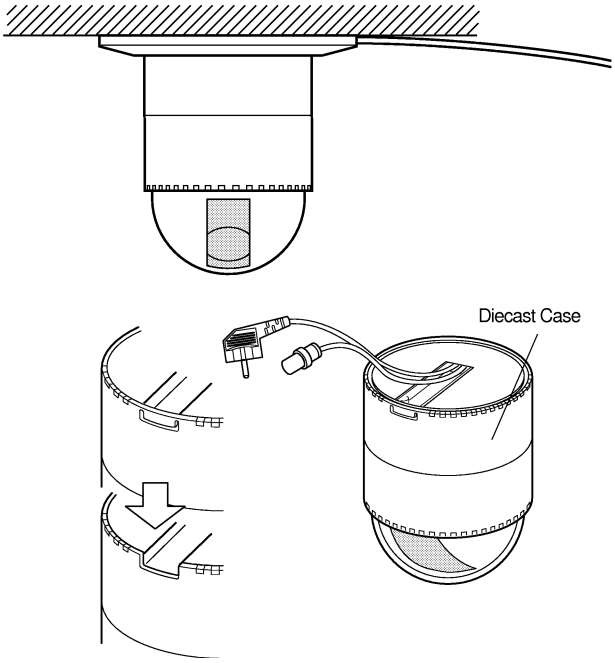
INSTALLATION

Precautions :

1. The following all installations should be made by qualified service personnel or system installers and should confirm to all local codes.
2. Be sure to use the ceiling board having the enough strength to support this camera.
3. When mounting this camera onto the ceiling except the above, use the optional Ceiling Bracket WV-Q105E, WV-Q106E or WV-Q107E.
4. When mounting this camera to the wall, use the optional Wall Mount Bracket WV-Q108E.

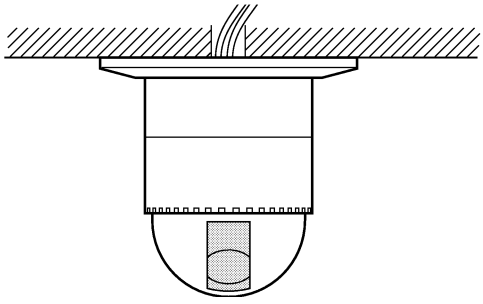
a. The cable come from the side

Cut the diecast case and decoration cover as shown in the following.

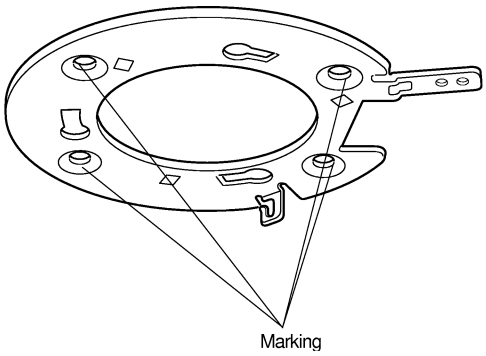


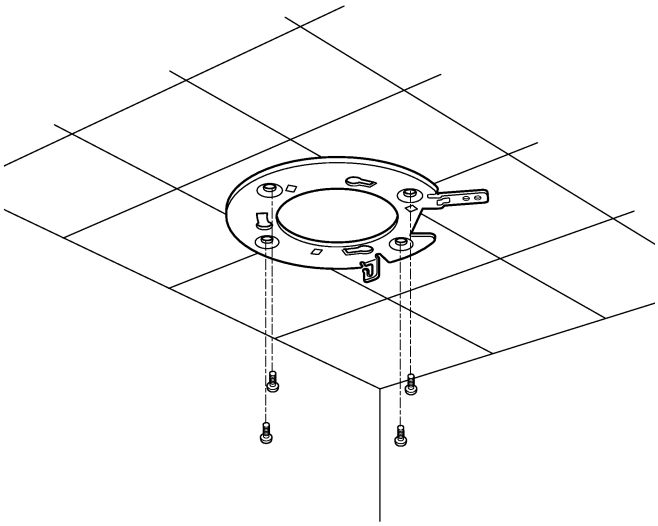
Note: Be sure to protect the video and power cables. Otherwise, the cutting surface will give the damage to the cables.

b. The cables go through into the ceiling nothing to do.



1. Remove the Mounting Screw (M3) from the Camera Mounting Angle (provided).
2. Mark the mounting holes into the ceiling by using the removed Camera Mounting Angle as a template.



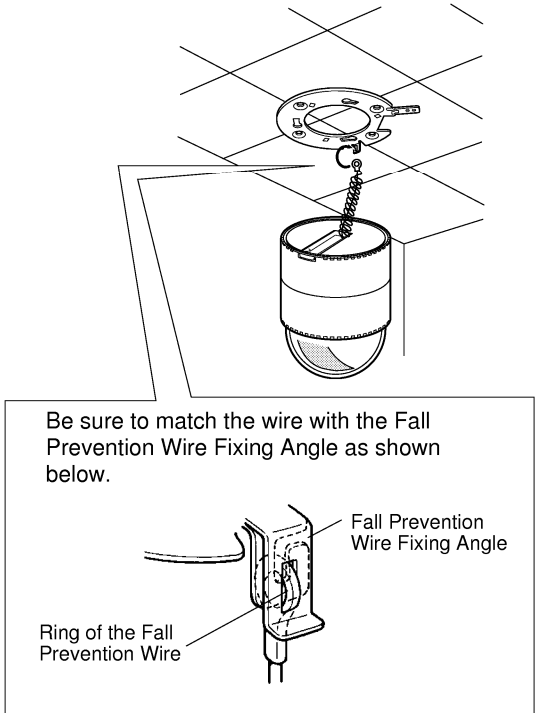


3. Fix the Camera Mounting Angle onto the ceiling by using four camera mounting angle fixing screws (not provided).

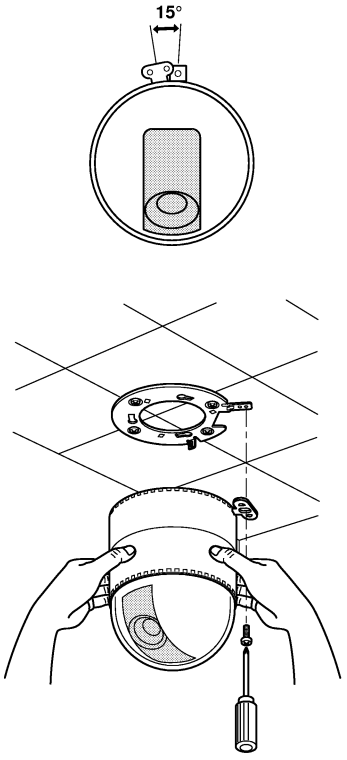
Caution:

Install to support the load of 4 times the total weight.

4. Hang the Fall Prevention Wire to the Camera Mounting Angle.


Be sure to match the wire with the Fall Prevention Wire Fixing Angle as shown below.
Fall Prevention Wire Fixing Angle
Ring of the Fall Prevention Wire

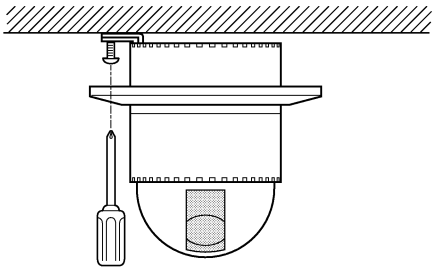
5. Insert the camera into the Camera Mounting Angle and rotate the camera clockwise.



6. Tighten the Mounting Screw (provided).

Notes :

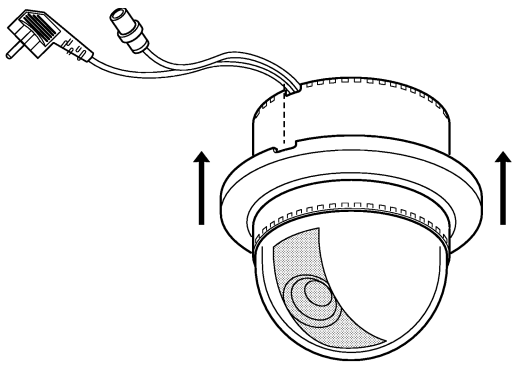
1. Tighten the Camera Fixing Screw with the screwdriver.
2. Do mount the camera and Camera Mounting Angle completely as shown in the following.
3. When removing the camera from the Camera Mounting Angle, loosen and press up the Camera Fixing Screw (M3) by using the screwdriver.



7. Fix the Decoration Cover to the Camera Mount-ing Angle.

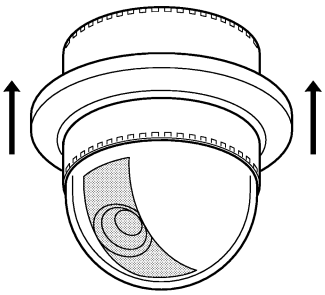
a. In case of coming the cable from the side.

Pass the cables into the pre-made hole (refer to item 1-a in INSTALLATION) on the Decoration Cover.



b. In case of going the cable through into the ceiling.

Push up the Decoration Cover to the Camera Mounting Angle.

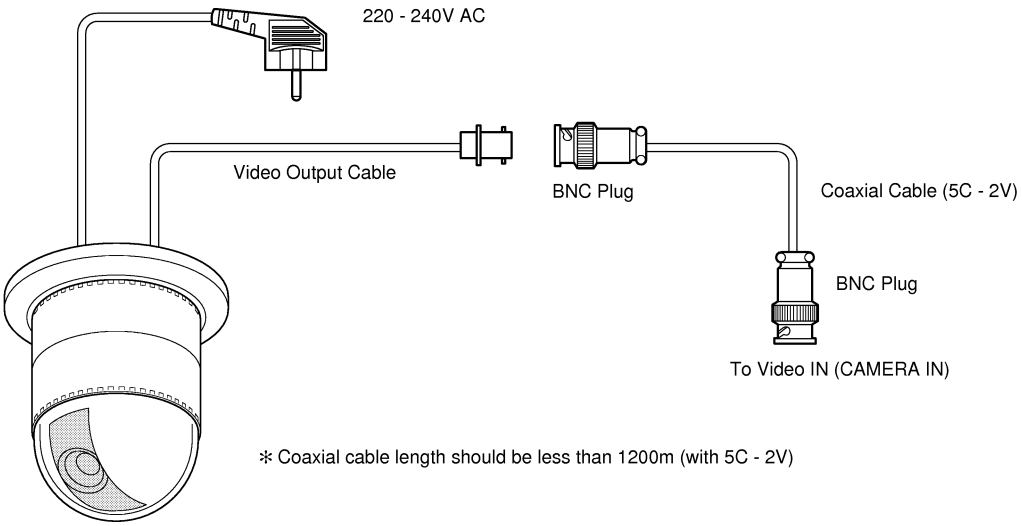


When using the optional bracket for this mounting, refer to the Operating Instructions of WV-Q105E, WV-Q106E, WV-Q107E or WV-Q108E.

CONNECTIONS

Precaution:

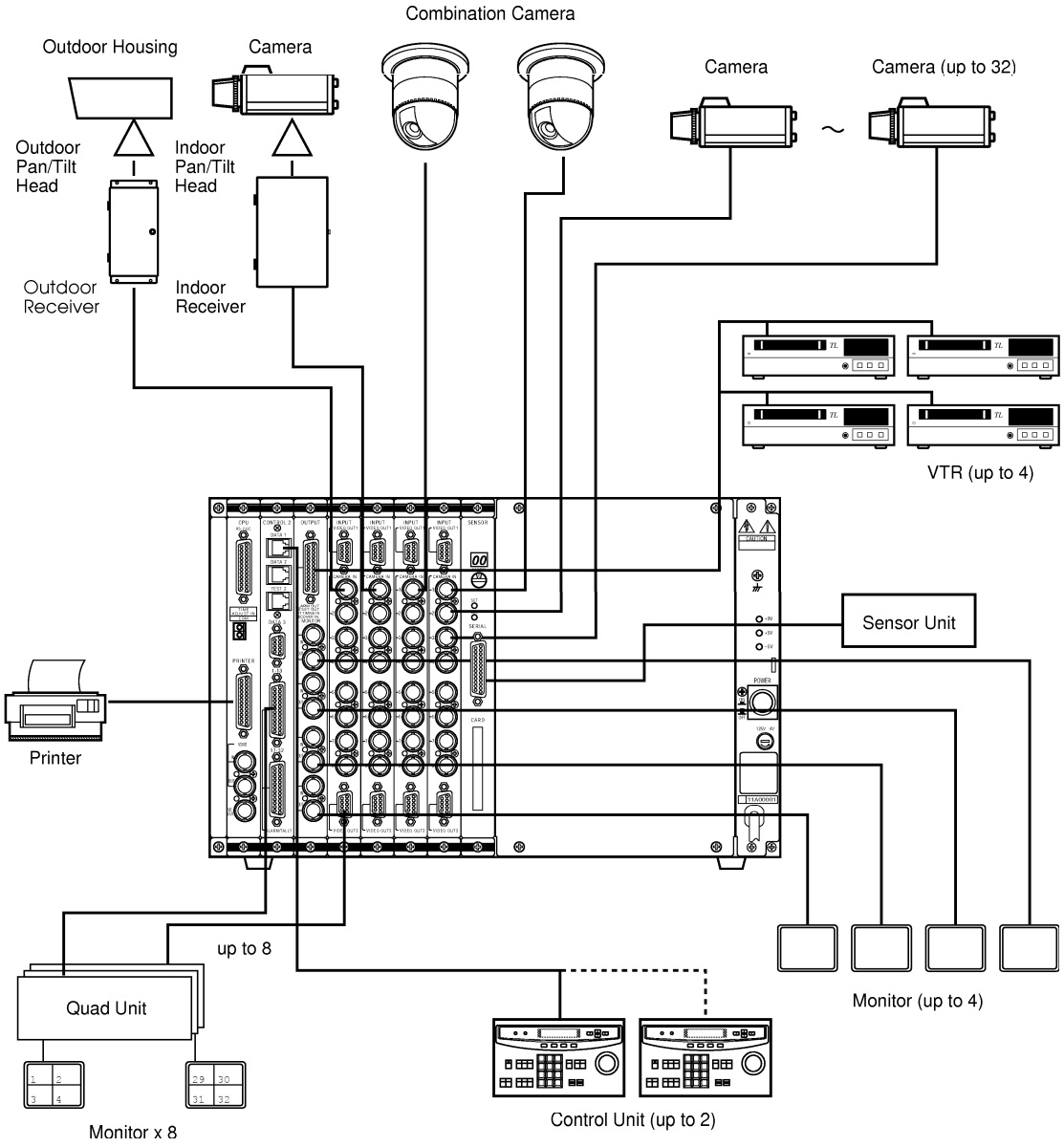
The following connections should be made by qualified service personnel or system installers.


220 - 240V AC
Video Output Cable
BNC Plug
Coaxial Cable (5C - 2V)
BNC Plug
To Video IN (CAMERA IN)
※ Coaxial cable length should be less than 1200m (with 5C - 2V)

Notes:

- The self-check operation (The panning, tilting, zooming and focusing are operated once) is done after turning on the power.

SYSTEM CONNECTION

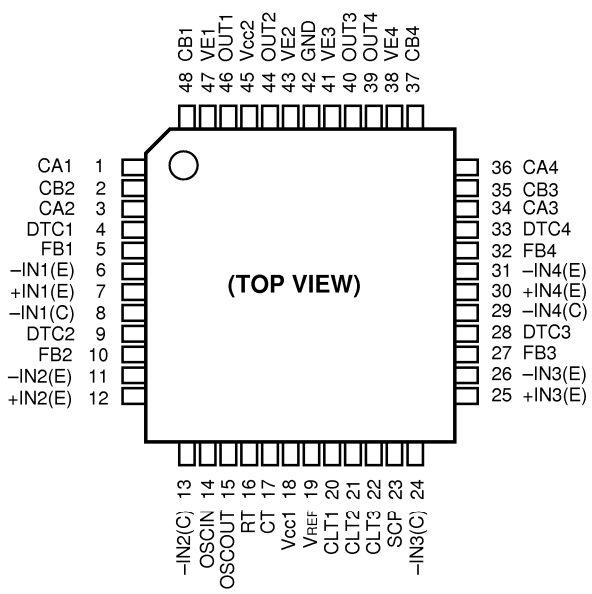


CIRCUIT DESCRIPTION

IC Description

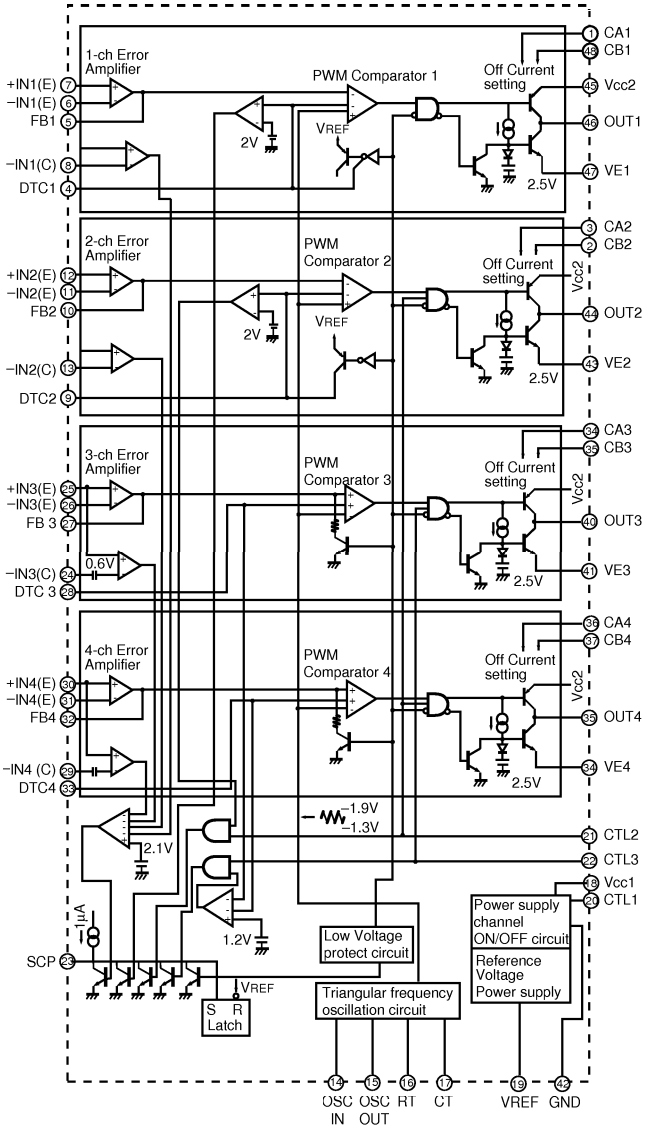
1. Servo Sub Board

1.1. IC39 on the Servo Sub Board is using the Switching regulator Controller IC YWMB3785APF.
Description of this IC is as follows:



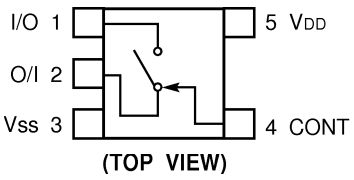
Pin	Name	I/O	Description
1	CA1	–	CA signal setting terminal.
2	CB1	–	CB signal setting terminal.
3	CA2	–	CA signal setting terminal.
4	DTC1	I	Dead Time Control signal input terminal.
5	FB1	O	FB signal output terminal.
6	–IN1(E)	I	–IN1(E) signal input terminal.
7	+IN1(E)	I	+IN1(E) signal input terminal.
8	–IN1(C)	I	–IN1(C) signal input terminal.
9	DTC2	I	Dead Time Control signal input terminal.
10	FB2	O	FB signal output terminal.
11	–IN2(E)	I	–IN2(E) signal input terminal.
12	–IN2(E)	I	–IN2(E) signal input terminal.
13	–IN2(C)	I	–IN2(C) signal input terminal.
14	OSCIN	I	Oscillator signal input terminal.
15	OSCOUT	O	Oscillator signal output terminal.
16	RT	–	Resistor connecting terminal for Trianglar frequency.
17	CT	–	Capacitor connecting terminal for Trianglar frequency.
18	Vcc1	–	Power supply terminal.
19	VREF	I	Reference Voltage input terminal.
20	CTL1	I	Control signal input terminals.
21	CTL2	I	
22	CTL3	I	

Pin	Name	I/O	Description
23	SCP	I	Short Circuit Protection signal input terminal.
24	–IN3(E)	I	–IN3(E) signal input terminal.
25	+IN3(E)	I	+IN3(E) signal input terminal.
26	–IN3(C)	I	–IN3(C) signal input terminal.
27	FB3	O	FB signal output terminal.
28	DTC3	I	Dead Time Control signal input terminal.
29	–IN4(E)	I	–IN4(E) signal input terminal.
30	+IN4(E)	I	+IN4(E) signal input terminal.
31	–IN4(C)	I	–IN4(C) signal input terminal.
32	FB4	O	FB signal output terminal.
33	DTC4	I	Dead Time Control signal input terminal.
34	CA3	–	CA signal setting terminal.
35	CB3	–	CB signal setting terminal.
36	CA4	–	CA signal setting terminal.
37	CB4	–	CB signal setting terminal.
38	VE4	I	VE signal input terminal.
39	OUT4	O	Totem Pole output terminals.
40	OUT3	O	
41	VE3	I	VE signal input terminal.
42	GND	–	Ground terminal.
43	VE2	I	VE signal input terminal.
44	OUT2	O	Totem Pole output terminal.
45	Vcc2	–	Power supply terminal.
46	OUT1	O	Totem Pole output terminal.
45	VE1	I	VE signal input terminal.
48	CB4	–	CB signal setting terminal.



1.2. IC11 on the Servo Sub Board and IC2 on the the Servo Main Board and IC2 on the Servo Main Board are using the Single Analog Switch/Multiplexer IC YWTC4S66FL

Description of this IC is as follows:

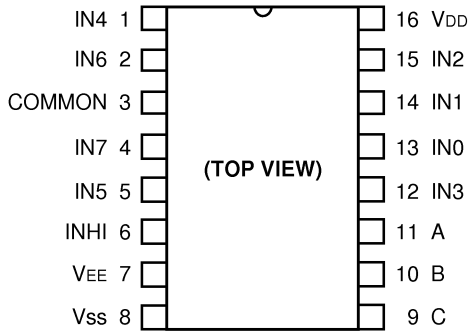


Truth Table

Input	Switch
Control	I/O – O/I
L	OFF
H	ON

1.3. IC13 on the Servo Sub Board and IC3 on the Servo Main Board are using the Analog Multiplexer/ Demultiplexer IC YWTC4051BFSL.

Description of this IC is as follows:



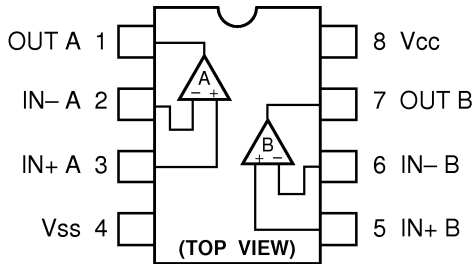
Truth Table

INHI	C	B	A	COMMON
L	L	L	L	IN0
L	L	L	H	IN1
L	L	H	L	IN2
L	L	H	H	IN3
L	H	L	L	IN4
L	H	L	H	IN5
L	H	H	L	IN6
L	H	H	H	IN7
H	*	*	*	NONE

* : Don't care.

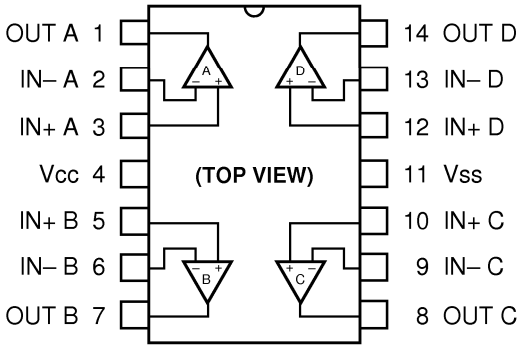
1.4. C37 and IC38 on the Servo Sub Board and IC12, IC15, IC16, IC17, IC19, IC22, IC25, IC35 and IC36 on the Servo Main Board are using the Low voltage JFET Operational Amplifier IC YWTL062CPWEL.

Description of this IC is as follows:



1.5. IC10 IC18, IC21, IC24, IC26 and IC33 on the Servo Sub Board and IC1, IC6, IC7, IC8, IC9 IC20, IC23, IC27 and IC50 on the Servo Main Board IC27, IC28 and IC29 on the Motor Drive Board are using the Quad Low voltage JFET Operational Amplifiers IC YWTL064CPWEL.

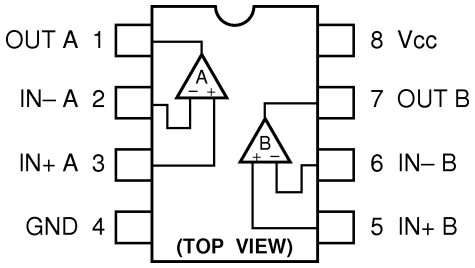
Description of this IC is as follows:



2. Servo Main Board

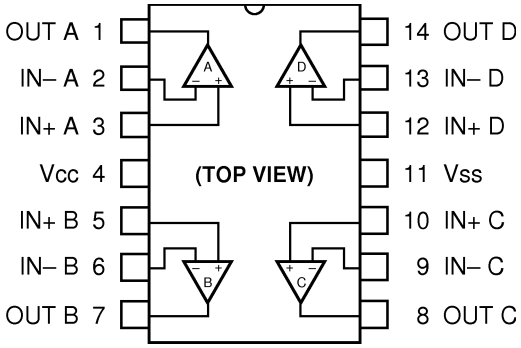
2.1. IC29, IC39 and IC49 on the Servo Main Board are using the Dual Single-voltage Supply Operational Amplifiers IC YWNJM2904D.

Description of this IC is as follows:



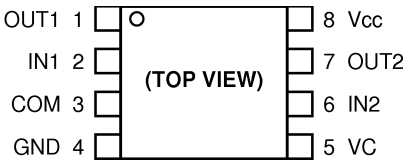
2.2. IC28 on the the Servo Main Board is using the Quad Operational Amplifiers IC YWNJM3403AM.

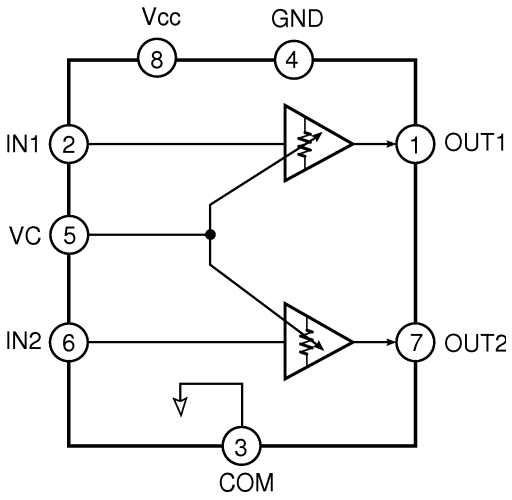
Description of this IC is as follows:



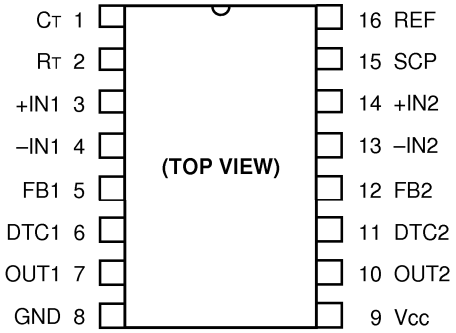
2.3. IC41, IC42, IC43, IC44 and IC45 on the Servo Main Board are using the Dual Voltage Controlled Amplifiers IC YWM5222FP6C.

Description of this IC is as follows:

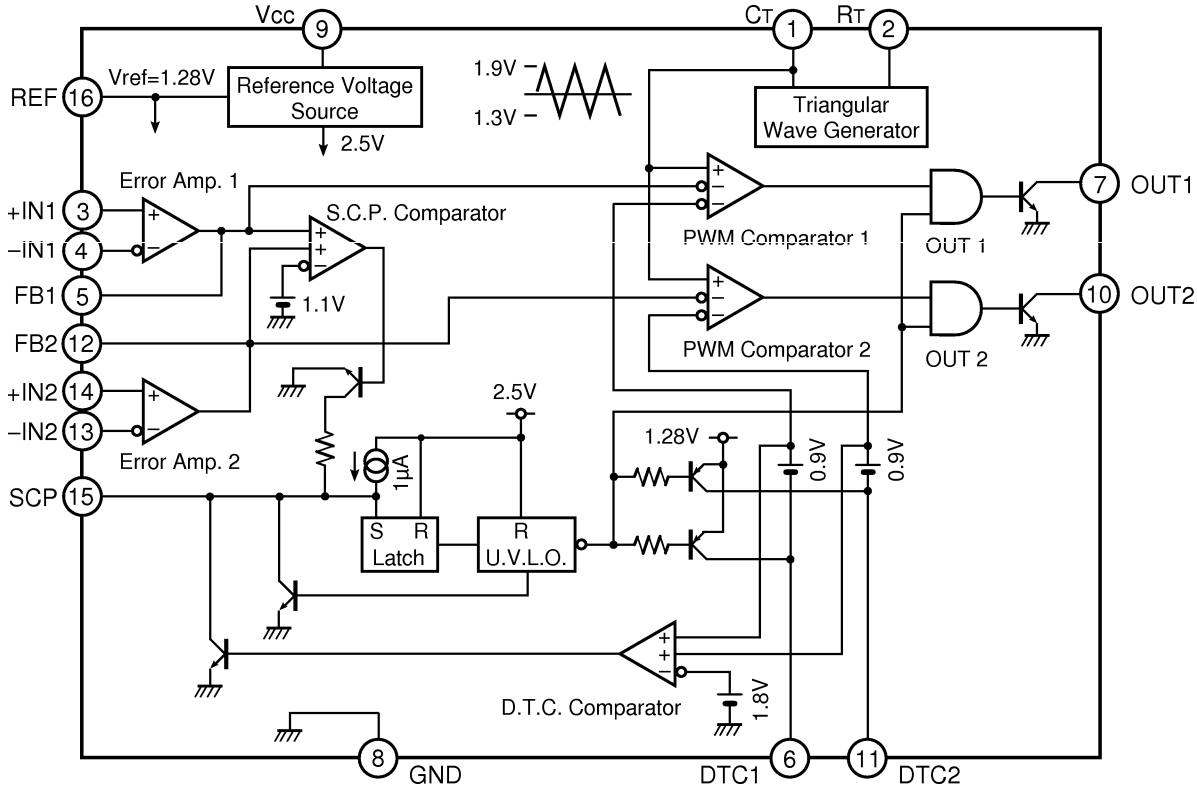




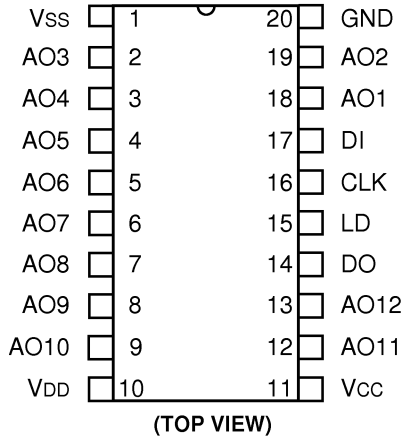
2.4. IC48 on the the Servo Main Board is using the Switching Regulator Controller IC YWMB3775PFV.
Description of this IC is as follows:



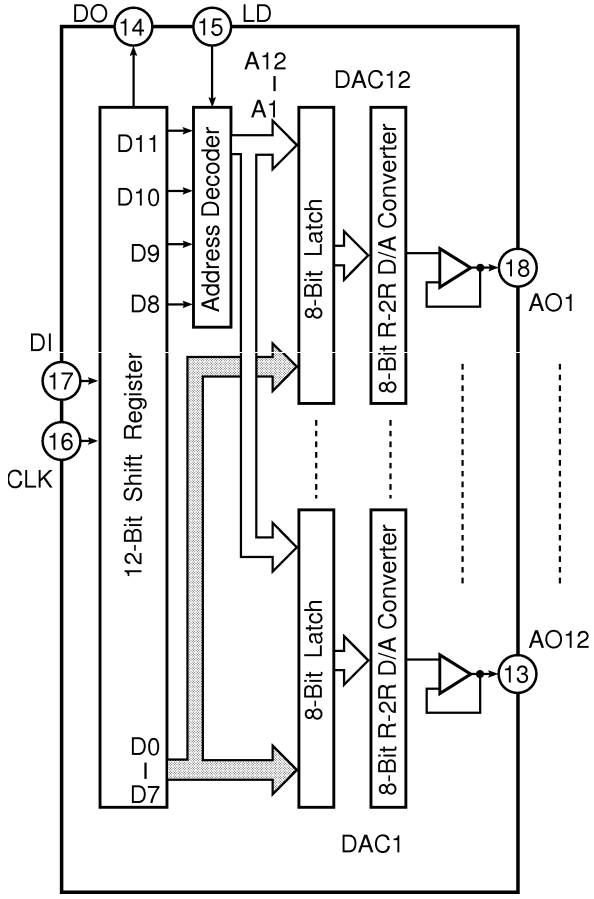
Pin	Name	I/O	Description
1	CT	–	Timing capacitor connecting terminal.
2	RT	–	Timing resistor connecting terminal.
3	+IN1	I	Non-inverted signal input terminal for Error Amplifier 1.
4	–IN1	I	Inverted signal input terminal for Error Amplifier 1.
5	FB1	–	Feedback terminal for Error Amplifier 1.
6	DTC1	I	Dead Time Control signal input terminal.
7	OUT1	O	Control signal output terminal 1.
8	GND	–	Ground terminal.
9	Vcc	–	Power supply terminal.
10	OUT2	O	Control signal output terminal 2.
11	DTC2	I	Dead Time Control signal input terminal.
12	FB2	–	Feedback terminal for Error Amplifier 2.
13	–IN2	I	Inverted signal input terminal for Error Amplifier 2.
14	+IN2	I	Non-inverted signal input terminal for Error Amplifier 2.
15	SCP	–	Short Circuit Protection terminal.
16	REF	O	Reference voltage output terminal.



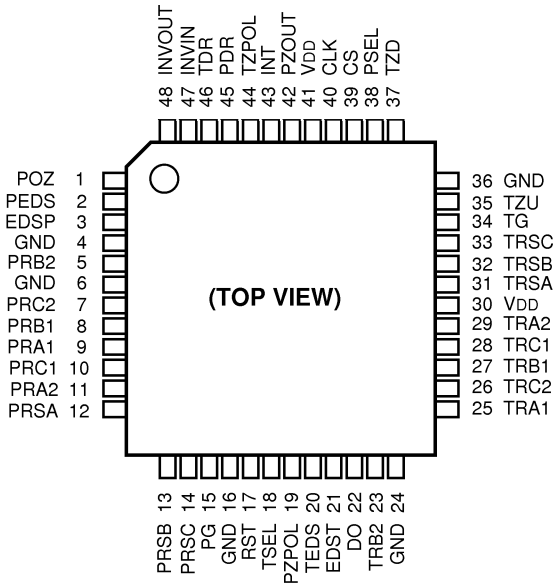
2.5. IC31 and IC32 on the Servo Main Board, IC5 on the Digital Board and IC16 on the Auto Focus Board are using the 12-ch D/A Converter IC YWMB88346BEF.
Description of this IC is as follows:



Pin	Name	I/O	Description
1	VSS	–	Ground terminal for D/A Converter circuit.
2	AO3	O	Analog Data 3 output terminal.
3	AO4	O	Analog Data 4 output terminal.
4	AO5	O	Analog Data 5 output terminal.
5	AO6	O	Analog Data 6 output terminal.
6	AO7	O	Analog Data 7 output terminal.
7	AO8	O	Analog Data 8 output terminal.
8	AO9	O	Analog Data 9 output terminal.
9	AO10	O	Analog Data 10 output terminal.
10	VDD	–	Power supply terminal for D/A Converter circuit.
11	VCC	–	Power supply terminal for MCU Interface and Ope-Amp. circuits.
12	AO11	O	Analog Data 11 output terminal.
13	AO12	O	Analog Data 12 output terminal.
14	DO	O	MSB Data output terminal from 12-Bit Shift Register.
15	LD	I	Load signal input terminal. Data of 12-Bit Shift Register should be loaded to Decoder and D/A Output Registers when LD = H.
16	CLK	I	Shift Clock input terminal. Serial Data from DI terminal should be input to Decoder and 12-Bit Shift Register at falling edge of this signal.
17	DI	I	12-Bit Serial Data input terminal.
18	AO1	O	Analog Data 1 output terminal.
19	AO2	O	Analog Data 2 output terminal.
20	GND	–	Ground terminal.



2.6. IC47 on the the Servo Main Board is using the PAN/TILT Servo IC YWUPD65612Y45.
Description of this IC is as follows:

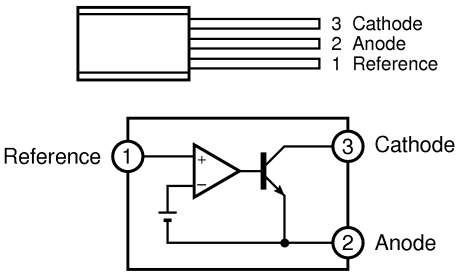


Pin	Name	I/O	Description
1	POZ	I	POZ signal input terminal.
2	PEDS	I	PEDS signal input terminal.
3	EDSP	O	EDSP signal output terminal.
4	GND	–	Ground terminal.
5	PRB2	I	PRB signal input terminal.
6	GND	–	Ground terminal.
7	PRC2	I	PRC signal input terminal.
8	PRB1	I	PRB signal input terminal.
9	PRA1	I	PRA signal input terminal.
10	PRC1	I	PRC signal input terminal.
11	PRA2	I	PRA signal input terminal.
12	PRSA	O	PRS signal output terminals.
13	PRSB	O	
14	PRSC	O	
15	PG	O	PG signal output terminal.
16	GND	–	Ground terminal.
17	RST	I	RST signal input terminal.
18	TSEL	I	TSEL signal input terminal.
19	PZPOL	I	PZSEL signal input terminal.
20	TEDS	I	TEDS signal input terminal.
21	EDS T	I	EDST signal input terminal.
22	DO	I	Data input terminal.
23	TRB2	I	TRB signal input terminal.
24	GND	–	Ground terminal.
25	TRA1	I	TRA signal input terminal.
26	TRC2	I	TRC signal input terminal.
27	TRB1	I	TRB signal input terminal.
28	TRC1	I	TRC signal input terminal.

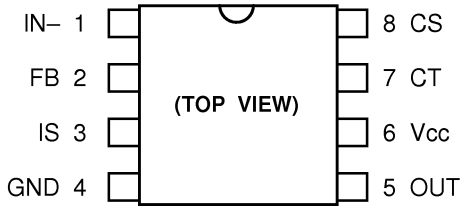
Pin	Name	I/O	Description
29	TRA2	I	TRA signal input terminal.
30	VDD	–	Power supply terminal.
31	TRSA	O	TRS signal output terminals.
32	TRSB	O	
33	TRSC	O	
34	TG	O	TG signal output terminal.
35	TZU	I	TZU signal input terminal.
36	GND	–	Ground terminal.
37	TZD	I	TZD signal input terminal.
38	PSEL	I	PSEL signal input terminal.
39	CS	I	CS signal input terminal.
40	CLK	I	Clock pulse input terminal.
41	VDD	–	Power supply terminal.
42	PZOUT	O	PZ signal output terminal.
43	INT	O	INT signal output terminal.
44	TZOUT	I	TZPOL signal input terminal.
45	PDR	O	PDR signal output terminal.
46	TDR	O	TDR signal output terminal.
47	INVIN	I	Inverted signal input terminal.
47	INVOUT	O	Inverted signal output terminal.

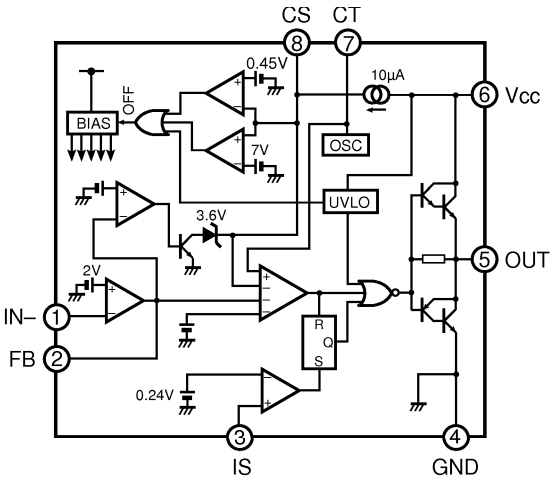
3. Power Board

3.1. IC2 on the Power Board is using the Variable Shunt Regulator IC YWTA76431S.
Description of this IC is as follows:



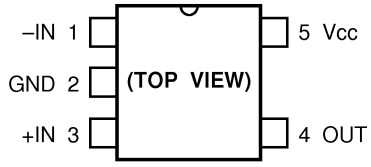
3.2. IC1 on the Power Board is using the PWM Switching Regulator Controller IC YWFA5304P.
Description of this IC is as follows:

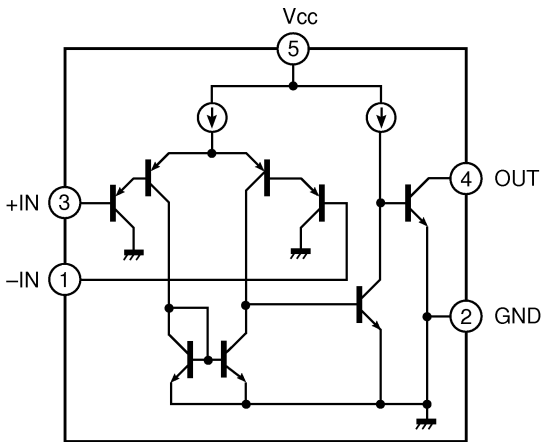




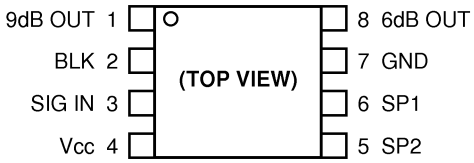
4. Drive Board

4.1. IC15 on the Drive Board is using the Single Comparator IC YWNJM2406F.
Description of this IC is as follows:

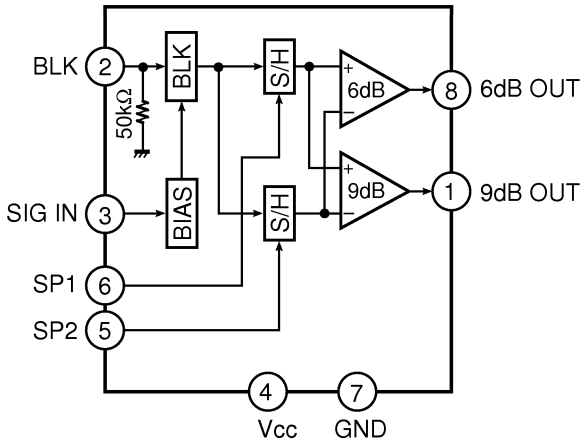




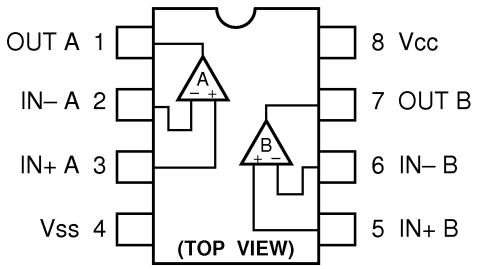
4.2. IC1 on the Drive Board is using the Correlated Double Sampling IC AN2018S.
Description of this IC is as follows:



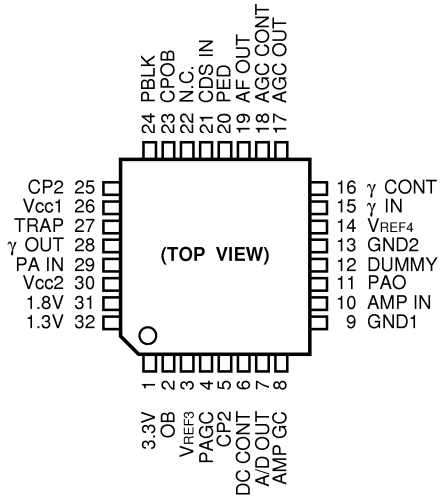
Pin	Name	I/O	Description
1	9dB OUT	O	CDS signal (9dB) output terminal.
2	BLK	I	Blanking Pulse input terminal.
3	SIG IN	I	CCD signal input terminal.
4	Vcc	–	Power supply terminal.
5	SP2	I	Sampling Pulse (2) input terminal.
6	SP1	I	Sampling Pulse (1) input terminal.
7	GND	–	Ground terminal.
8	6dB OUT	O	CDS signal (6dB) output terminal.



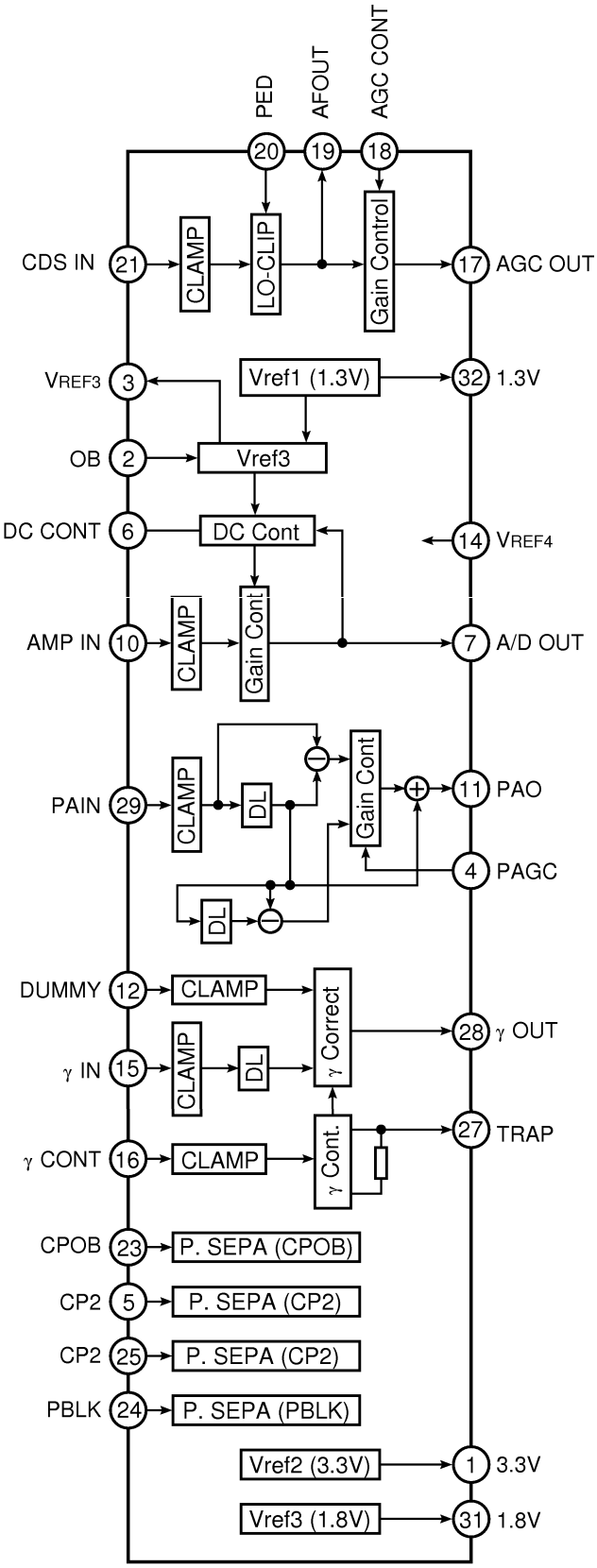
4.3. IC11 on the Drive Board and IC1 on the Auto Focus Board are using the Dual Operational Amplifiers IC YWNJM3416V.
Description of this IC is as follows.



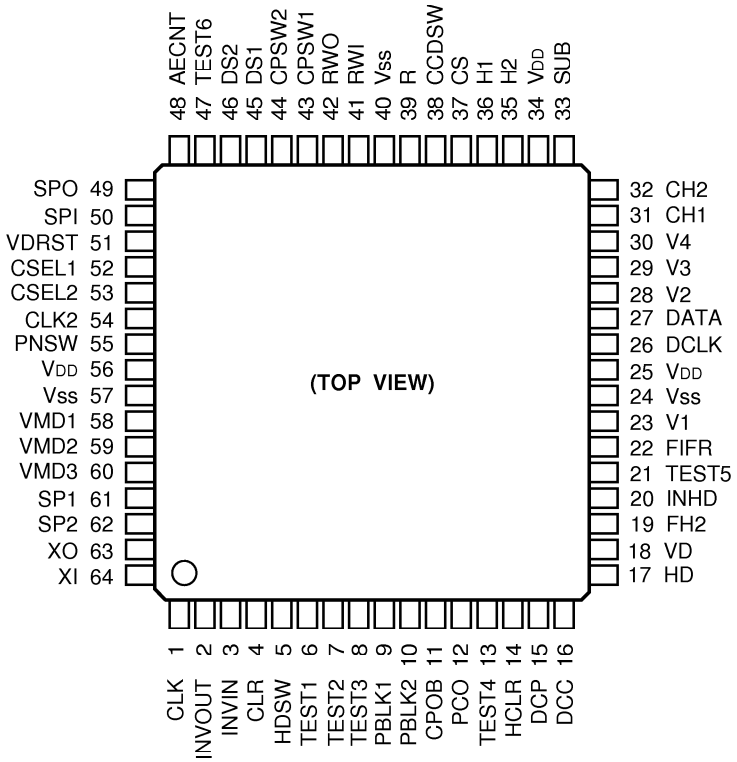
4.4. IC6 on the Drive Board is using the AGC IC AN2034FAP.
Description of this IC is as follows:



Pin	Name	I/O	Description
1	3.3V	O	Reference voltage (3.3V) output terminal.
2	OB	I	OB signal adjusting terminal.
3	VREF3	O	Reference voltage 3 input terminal.
4	PAGC	–	Pre Apature Gain control terminal.
5	CP2	I	Clamp Pulse input terminal.
6	DC CONT	O	DC control signal output terminal.
7	A/D OUT	O	A/D OUT signal output terminal.
8	AMP GC	I	Amplifier Gain control terminal.
9	GND1	–	Ground terminal.
10	AMP IN	I	Amplifier input terminal.
11	PAO	O	Pre Apature signal output terminal.
12	DUMMY	–	Dummy Clamp terminal.
13	GND2	–	Ground terminal.
14	VREF4	I	Reference voltage (1.8V) input terminal.
15	γ IN	I	γ signal input terminal.
16	γ CONT	I	γ control terminal.
17	AGC OUT	O	AGC signal output terminal.
18	AGC CONT	I	AGC control terminal.
19	AF OUT	O	AF signal output terminal.
20	PED	I	Pedestal Level adjusting terminal.
21	CDS IN	I	CDS-OUT signal input terminal.
22	N.C.	–	Non connection.
23	CPOB	I	CPOB signal input terminal.
24	PBLK	I	Pre Blanking Pulse input terminal.
25	CP2	I	Clamp Pulse input terminal.
26	Vcc1	–	Power supply terminal.
27	TRAP	O	TRAP signal output terminal.
28	γ OUT	O	γ signal output terminal.
29	PAIN	I	Pre Apature signal input terminal.
30	Vcc2	–	Power supply terminal.
31	1.8V	O	Reference voltage (1.8V) output terminal.
32	1.3V	O	Reference voltage (1.3V) output terminal.



4.5. IC4 on the Drive Board is using the CCD Drive Pulse Generator IC YWCXD2404R.
Description of this IC is as follows:

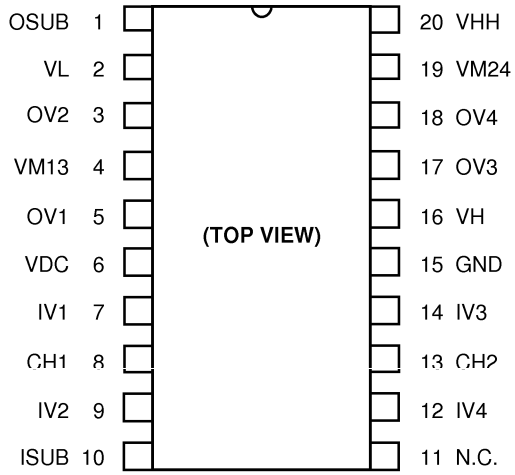


Pin	Name	I/O	Description
1	CLK	O	Clock (fck) Pulse output terminal.
2	INVOUT	O	Inverter output terminal.
3	INVIN	I	Inverter input terminal.
4	CLR	I	All clear signal input terminal. L: Clear; H: Active
5	HDSW	I	HD Switching signal input terminal. H: Internal; L: External
6	TEST1	I	Test terminal (normally open).
7	TEST2	I	Test terminal (normally open).
8	TEST3	I	Test terminal (normally open).
9	PBLK1	O	Pre Blanking Pulse output terminal. Start: Rising edge of HD signal.
10	PBLK2	O	Pre Blanking Pulse output terminal. Start: Rising edge of HCLR signal.
11	CPOB	O	OB Clamp Pulse output terminal.
12	PCO	O	Phase Comparator output terminal.
13	TEST4	I	Test terminal (normally open).
14	HCLR	O	H Clear pulse output.
15	DCP	O	Digital Clamp Pulse output.
16	DCC	O	Digital Clamp Pulse output terminal.

Pin	Name	I/O	Description
17	HD	I	HD signal input terminal.
18	VD	I	VD signal input terminal.
19	FH2	O	FH/2 Pulse output terminal.
20	INHD	O	Internal HD output terminal.
21	TEST5	I	Test terminal (normally open).
22	FIFR	I	Field accumulation:H Frame accumulation:L terminal.
23	V1	O	V1 Transfer Pulse output terminal.
24	Vss	–	Ground terminal.
25	VDD	–	Power supply terminal.
26	DCLK	I	Serial Clock input terminal.
27	DATA	I	Serial Data input terminal.
28	V2	O	V2 Transfer Pulse output terminal.
29	V3	O	V3 Transfer Pulse output terminal.
30	V4	O	V4 Transfer Pulse output terminal.
31	CH1	O	Charge Pulse for V1 output terminal.
32	CH2	O	Charge Pulse for V3 output terminal.
33	SUB	O	SUB signal output terminal.

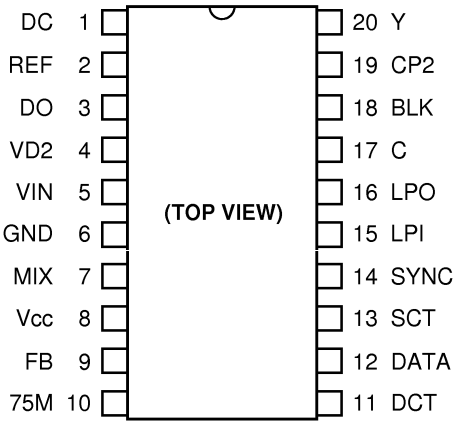
Pin	Name	I/O	Description
34	V_{DD}	–	Power supply terminal.
35	H2	O	H2 Transfer Pulse output terminal.
36	H1	O	H1 Transfer Pulse output terminal.
37	CS	I	Chip Select signal input terminal for serial Data.
38	CCDSW	I	CCD Element Select signal input terminal. (L: 510H; H: 768H)
39	R	O	R Transfer Pulse output terminal.
40	Vss	–	Ground terminal.
41	RWI	I	R Transfer Pulse Width adjust input terminal.
42	RWO	O	R Transfer Pulse Width adjust output terminal.
43	CPSW1	I	CPOB Phase Switching signal input terminals.
44	CPSW2	I	
45	DS1	O	Pulse output terminals for CDS.
46	DS2	O	
47	TEST6	I	Test terminal (nomally open).
48	AECNT	I	Electronic Shutter setting signal input terminal.
49	SPO	O	SP1, 2 Pulse phase adjust output terminal.
50	SPI	I	SP1, 2 Pulse phase adjust input terminal.
51	VDRST	I	VD Reset Pulse input terminal. (L: Reset; H: Normal)
52	CSEL1	I	CLK2 Pulse phase switching signal input terminals.
53	CSEL2	I	
54	CLK2	O	Clock Pulse output terminal for Digital circuit.
55	PNSW	I	TV System switching signal input terminal. (L: NTSC; H: PAL)
56	V_{DD}	–	Power supply terminal.
57	Vss	–	Ground terminal.
58	VMD1	I	Electronic Shutter switching signal input terminals.
59	VMD2	I	
60	VMD3	I	
61	SP1	O	Sampling Pulse output terminals.
62	SP2	O	
63	XO	O	2fck OSC output terminal.
64	XI	I	2fck OSC input terminal.

4.6. IC10 on the Drive Board is using the CCD V-Driver IC MN3112SA.
Description of this IC is as follows:



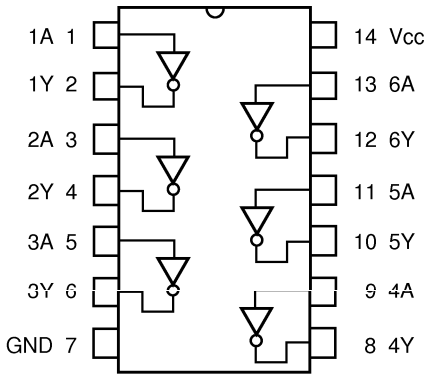
Pin	Name	I/O	Description
1	OSUB	O	V_{SUB} signal output terminal.
2	VL	–	VL voltage supply terminal.
3	OV2	O	Vertical Pulse 2 output terminal.
4	VM13	I	VM13 voltage supply terminal.
5	OV1	O	Vertical Pulse 1 output terminal.
6	VDC	–	Power supply.
7	IV1	I	Vertical Pulse 1 input terminal.
8	CH1	I	Horizontal Pulse 1 input terminal.
9	IV2	I	Vertical Pulse 2 input terminal.
10	ISUB	I	V_{SUB} signal input terminal.
11	N.C.	–	Non Connection.
12	IV4	I	Vertical Pulse 4 input terminal.
13	CH2	I	Horizontal Pulse 2 input terminal.
14	IV3	I	Vertical Pulse 3 input terminal.
15	GND	–	Ground terminal.
16	VH	–	VH voltage supply terminal.
17	OV3	O	Vertical Pulse 3 output terminal.
18	OV4	O	Vertical Pulse 4 output terminal.
19	VM24	–	VM24 voltage supply terminal.
20	VHH	–	VHH voltage supply terminal.

4.7. IC8 on the Drive Board is using the Video output IC YWC5020074E1.
Description of this IC is as follows:



Pin	Name	I/O	Description
1	DC	I	DC signal input terminal.
2	REF	O	Reference voltage (2V) output terminal.
3	DO	O	Data output terminal.
4	VD2	O	VD2 signal output terminal.
5	VIN	I	Video signal input terminal.
6	GND	–	Ground terminal.
7	MIX	O	MIX signal output terminal.
8	Vcc	–	Power supply terminal.
9	FB	I	Feedback signal input terminal.
10	75M	O	Video signal output terminal.
11	DCT	I	DCT signal input terminal.
12	DATA	I	Data input terminal.
13	SCT	I	SCT signal input terminal.
14	SYNC	I	Sync signal input terminal.
15	LPI	I	Low Pass Filter input terminal.
16	LPO	O	Low Pass Filter output terminal.
17	C	I	Chroma signal input terminal.
18	BLK	I	Blanking Pulse input terminal.
19	CP2	I	Clamp Pulse input terminal.
20	Y	I	Luminance signal input terminal.

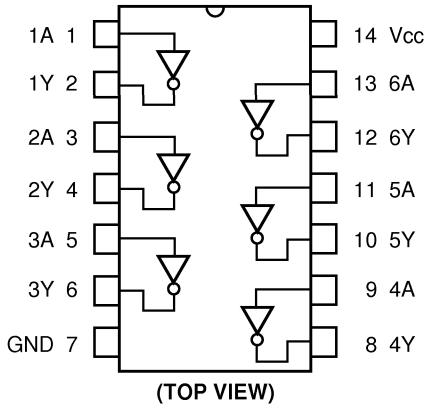
4.8. IC2 on the Drive Board is using the Hex Inverters IC YWTC74AT04F.
Description of this IC is as follows:



Truth Table

INPUT A	OUTPUT Y
L	H
H	L

4.9. IC13 on the Drive Board and IC13 on Auto Focus Board are using the Hex Inverters IC YWTC74 VC04FS.
Description of this IC is as follows:

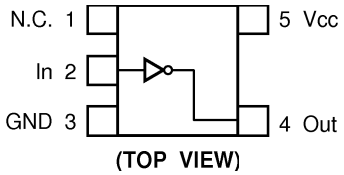


Truth Table

INPUT A	OUTPUT Y
L	H
H	L

5. Digital Board

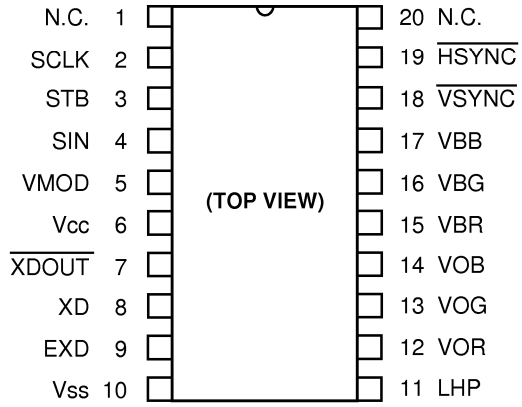
5.1. IC20 and IC25 on the Digital Board are using Single Inverter IC YWTC7SU04FUL.
Description of this IC is as follows:



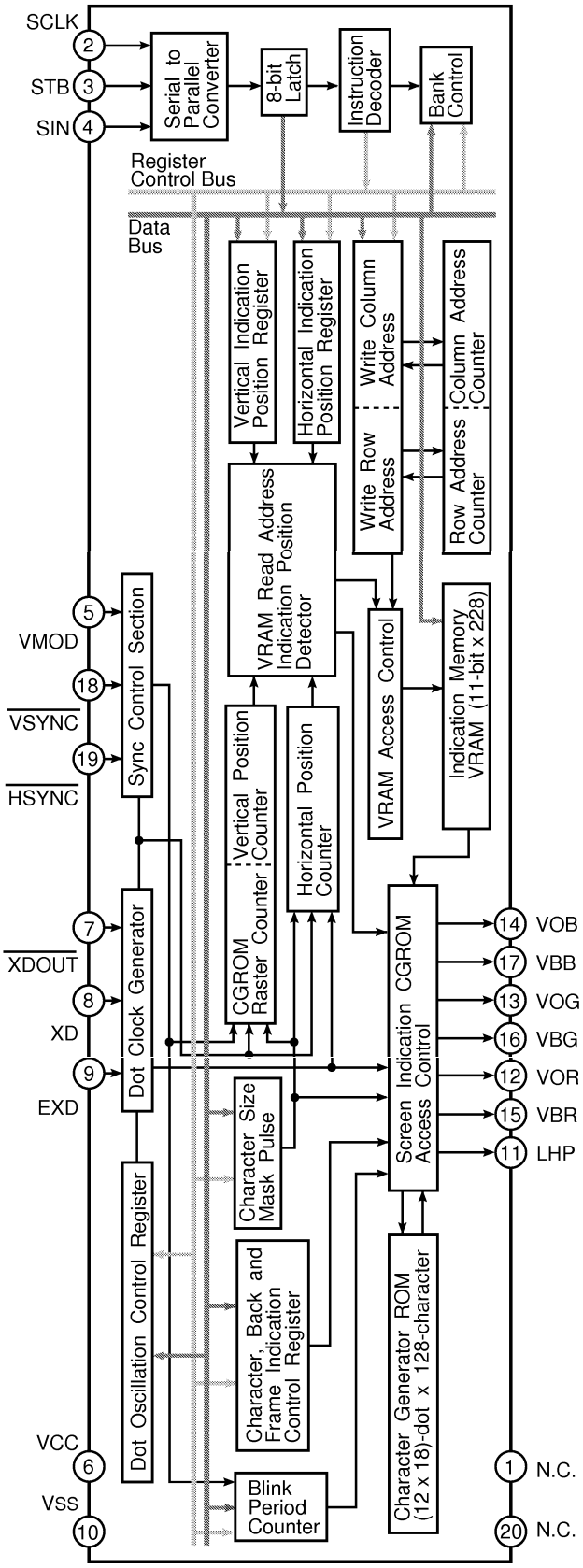
Truth Table

Input	Output
L	H
H	L

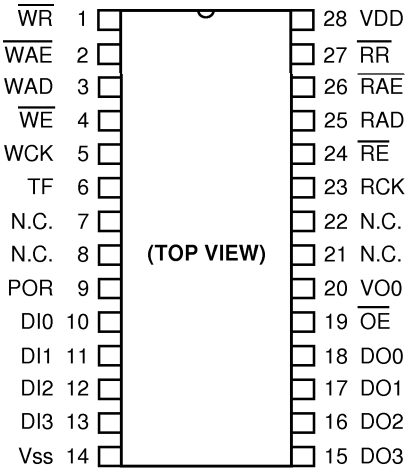
5.2. IC18 on the Digital Board is using the Character Generator IC YWMB90077PF104.
Description of this IC is as follows:

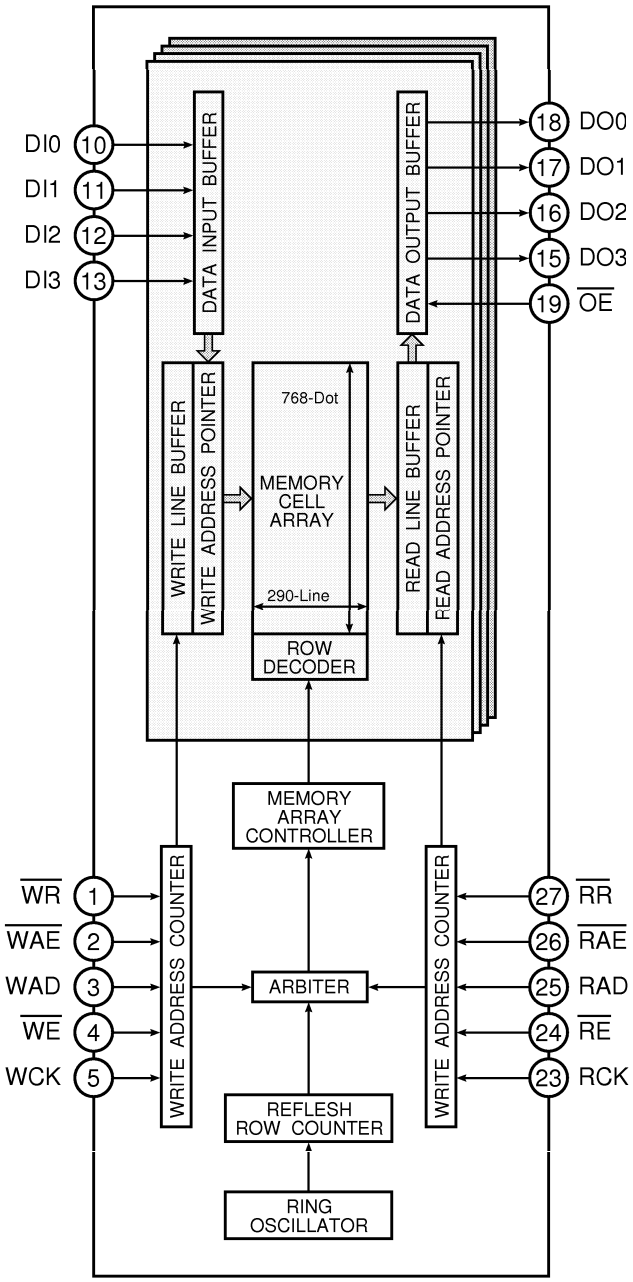


Pin	Name	I/O	Description
1	N.C.	–	Non Connection
2	SCLK	I	Serial Clock Pulse input terminal.
3	STB	I	Strobe Pulse input terminal. Serial Data should be read at rising edge of this signal.
4	SIN	I	Serial Data Input terminal for indication control.
5	VMOD	I	Effective edge changing input terminal for Vertical Sync Signal. "H" = Rising edge "L" = Falling edge
6	Vcc	–	Power supply terminal.
7	$\overline{\text{XDOUT}}$	O	XD Inverted signal output terminal.
8	XD	O	XD signal output terminal.
9	EXD	I	External signal input terminal.
10	Vss	–	Ground terminal.
11	LHP	O	Line Hider Pulse output terminal.
12	VOR	O	Colour signal output terminals of RGB system.
13	VOG	O	
14	VOB	O	
15	VBR	O	Blanking signal output terminals which indicating output of the character signal against the RGB system.
16	VBG	O	
17	VBB	O	
18	$\overline{\text{VSYNC}}$	I	Vertical Sync signal input terminal.
19	$\overline{\text{HSYNC}}$	I	Horizontal Sync signal input terminal.
20	N.C.	–	Non Connection



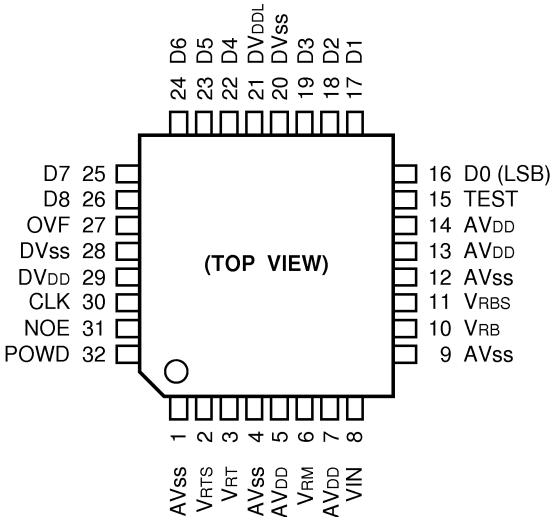
5.3. IC14, IC15 and IC16 on the Digital Board are using the 0.9M-bit FIFO Field Memory IC MN4792S.
Description of this IC is as follows:





Pin	Name	I/O	Description
1	$\overline{WR}$	I	Write Reset Pulse input terminal.
2	$\overline{WAE}$	I	Write Address Enable signal input terminal.
3	WAD	I	Write Address signal input terminal.
4	$\overline{WE}$	I	Write Enable signal input terminal.
5	WCK	I	Write Clock Pulse input terminal.
6	TF	I	Test Function signal input terminal.
7	N.C.	–	Non connection.
8	N.C.	–	Non connection.
9	POR	I	Power On Reset Pulse input terminal.
10	DI0	I	Data input terminals. (4-Bit)
11	DI1	I	
12	DI2	I	
13	DI3	I	
14	Vss	–	Ground terminal.
15	DO3	O	Data output terminals. (4-Bit)
16	DO2	O	
17	DO1	O	
18	DO0	O	
19	$\overline{OE}$	I	Output Enable signal input terminal.
20	VO0	–	Power supply terminal for Output section.
21	N.C.	–	Non connection.
22	N.C.	–	Non connection.
23	RCK	I	Read Clock Pulse input terminal.
24	$\overline{RE}$	I	Read Enable signal input terminal.
25	RAD	I	Read Address signal input terminal.
26	$\overline{RAE}$	I	Read Address Enable signal input terminal.
27	$\overline{RR}$	I	Read Reset Pulse input terminal.
28	V_{DD}	–	Power supply terminal.

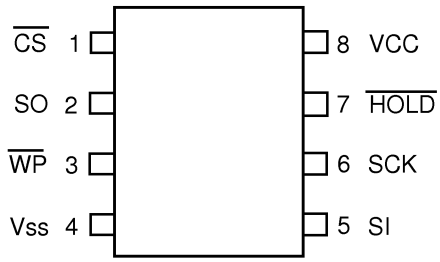
5.4. IC1 on the Digital Board are using the 9-bit A/D Converter IC MN6576.
Description of this IC is as follows:



Pin	Name	I/O	Description
22	D4	O	Digital signal output terminals. (9-Bit) (MSB)
23	D5	O	
24	D6	O	
25	D7	O	
26	D8	O	
27	OVF	O	Overflow output terminal.
28	DVss	–	Ground terminal for Digital circuit.
29	DVDD	–	Power supply terminal for Digital circuit.
30	CLK	I	Sampling Clock Pulse input terminal.
31	NOE	I	Output Enable signal input terminal.
32	POWD	I	Power Down Mode switching terminal.

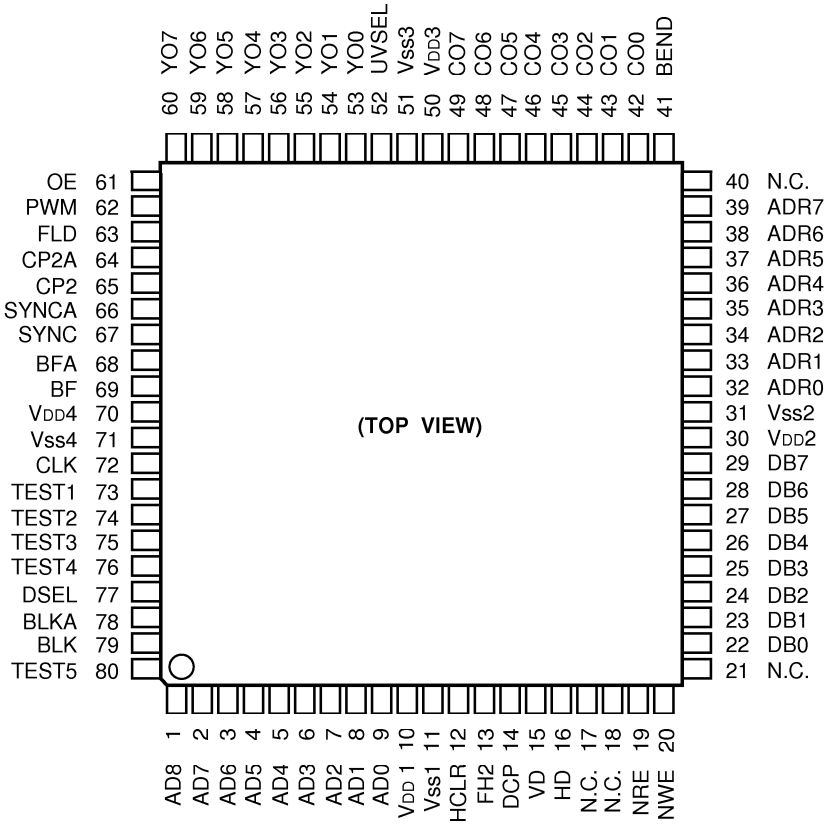
Pin	Name	I/O	Description
1	AVss	–	Ground terminal for Analog circuit.
2	VRTS	O	Top reference voltage output terminal.
3	VRT	I	Top reference voltage input terminal.
4	AVss	–	Ground terminal for Analog circuit.
5	AVDD	–	Power supply terminal for Analog circuit.
6	VRM	–	Center reference voltage terminal.
7	AVDD	–	Power supply terminal for Analog circuit.
8	VIN	I	Analog signal input terminal.
9	AVss	–	Ground terminal for Analog circuit.
10	VRB	I	Bottom reference voltage input terminal.
11	VRBS	O	Bottom reference voltage output terminal.
12	AVss	–	Ground terminal for Analog circuit.
13	AVDD	–	Power supply terminal for Analog circuit.
14	AVDD	–	Power supply terminal for Analog circuit.
15	TEST	I	Test Mode Switching terminal.
16	D0	O	(LSB) Digital signal output terminals. (9-Bit)
17	D1	O	
18	D2	O	
19	D3	O	
20	DVss	–	Ground terminal for Digital circuit.
21	DVDDL	I	Low voltage power supply terminal for Digital signal output circuit.

5.5. IC4 and IC27 on the Digital Board are using CMOS 16384-Bit Serial E2PROM IC YWX2516SI27T.
Description of this IC is as follows:



Pin	Name	I/O	Description
1	$\overline{CS}$	I	Chip select signal input terminal.
2	SO	O	Serial Data output terminal.
3	$\overline{WP}$	I	Write Protect signal input terminal.
4	Vss	–	Ground terminal.
5	SI	I	Serial Data input terminal.
6	SCK	I	Serial Clock pulse input terminal.
7	$\overline{HOLD}$	I	Hold signal input terminal.
8	Vcc	–	Power supply terminal.

5.6. IC3 on the Digital Board is using the Y/C Digital Signal Processor IC MN673211M2U.
Description of this IC is as follows:

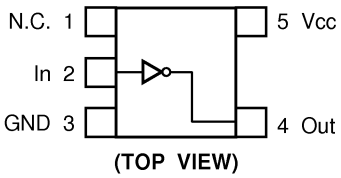


Pin	Name	I/O	Description
1	AD8	I	Video Signal Data input terminals from A/D Converters. (8-Bit)
2	AD7	I	
3	AD6	I	
4	AD5	I	
5	AD4	I	
6	AD3	I	
7	AD2	I	
8	AD1	I	
9	AD0	I	
10	VDD1	–	Power supply terminal.
11	Vss1	–	Ground terminal.
12	HCLR	I	HCLR Pulse input terminal.
13	FH2	I	FH2 signal input terminal.
14	DCP	I	Clamp Pulse input terminal for Digital circuit.
15	VD	I	Vertical Drive Pulse input terminal.
16	HD	I	Horizontal Drive Pulse input terminal.
17	N.C.	–	Non connection.
18	N.C.	–	Non connection.
19	NRE	I	Read Enable signal input terminal.

Pin	Name	I/O	Description
20	NWE	I	Write Enable signal input terminal.
21	N.C.	–	Non connection.
22	DB0	I/O	(LSB)
23	DB1	I/O	Data Bus terminals between Microprocessor. (8-Bit)
24	DB2	I/O	
25	DB3	I/O	
26	DB4	I/O	
27	DB5	I/O	
28	DB6	I/O	
29	DB7	I/O	(MSB)
30	VDD2	–	Power supply terminal.
31	Vss2	–	Ground terminal.
32	ADR0	I	(LSB)
33	ADR1	I	Address signal input terminals from Microprocessor. (8-Bit)
34	ADR2	I	
35	ADR3	I	
36	ADR4	I	
37	ADR5	I	
38	ADR6	I	
39	ADR7	I	(MSB)

Pin	Name	I/O	Description
40	N.C.	–	Non connection.
41	BEND	O	Block Average Data Interrupt signal output terminal.
42	CO0	O	(LSB)
43	CO1	O	
44	CO2	O	
45	CO3	O	Chroma Signal Data output terminals. (8-Bit)
46	CO4	O	
47	CO5	O	
48	CO6	O	
49	CO7	O	(MSB)
50	VDD3	–	Power supply terminal.
51	Vss3	–	Ground terminal.
52	UVSEL	O	U/V Signal Switching Pulse output terminal.
53	YO0	O	(LSB)
54	YO1	O	
55	YO2	O	
56	YO3	O	Luminance Signal Data output terminals. (8-Bit)
57	YO4	O	
58	YO5	O	
59	YO6	O	
60	YO7	O	(MSB)
61	OE	I	Output Enable signal input terminal.
62	PWM	O	PWM signal output terminal for Lens Iris Control.
63	FLD	O	FLD signal output terminal.
64	CP2A	O	Clamp Pulse (CP2) output terminal.
65	CP2	I	Clamp Pulse (CP2) input terminal.
66	SYNCA	O	Composite Sync signal output terminal.
67	SYNC	I	Composite Sync signal input terminal.
68	BFA	O	Burst Flag Pulse output terminal for Encoder.
69	BF	I	Burst Flag Pulse input terminal.
70	VDD4	–	Power supply terminal.
71	Vss4	–	Ground terminal.
72	CLK	I	Clock Pulse input terminal.
73	TEST1	I	Test terminals. (Normally fixed at low.)
74	TEST2	I	
75	TEST3	I	
76	TEST4	I	
77	DSEL	I	1 Clock Delay selection signal input terminal.
78	BLKA	O	Blanking Pulse output terminal for Encoder.
79	BLK	O	Blanking Pulse input terminal.
80	TEST5	I	Test terminal. (Normally fixed at low.)

5.7. IC28 on the Digital Board is using the Single Inverter IC YWTC7S04FUL.
Description of this IC is as follows:

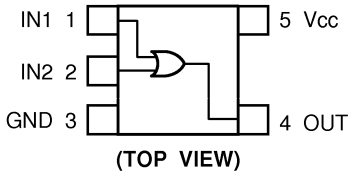


(TOP VIEW)

Truth Table

Input	Output
L	H
H	L

5.8. IC23 on the Digital Board is using the Single 2-Input OR Gate IC YWTC7SU32F.
Description of this IC is as follows:

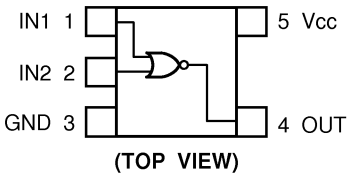


(TOP VIEW)

Truth Table

Inputs		Output
IN1	IN2	
L	L	L
H	L	H
L	H	H
H	H	H

5.9. IC25 on the Digital Board is using the Single 2-Input NOR Gate IC YWTC7S02F.
Description of this IC is as follows:

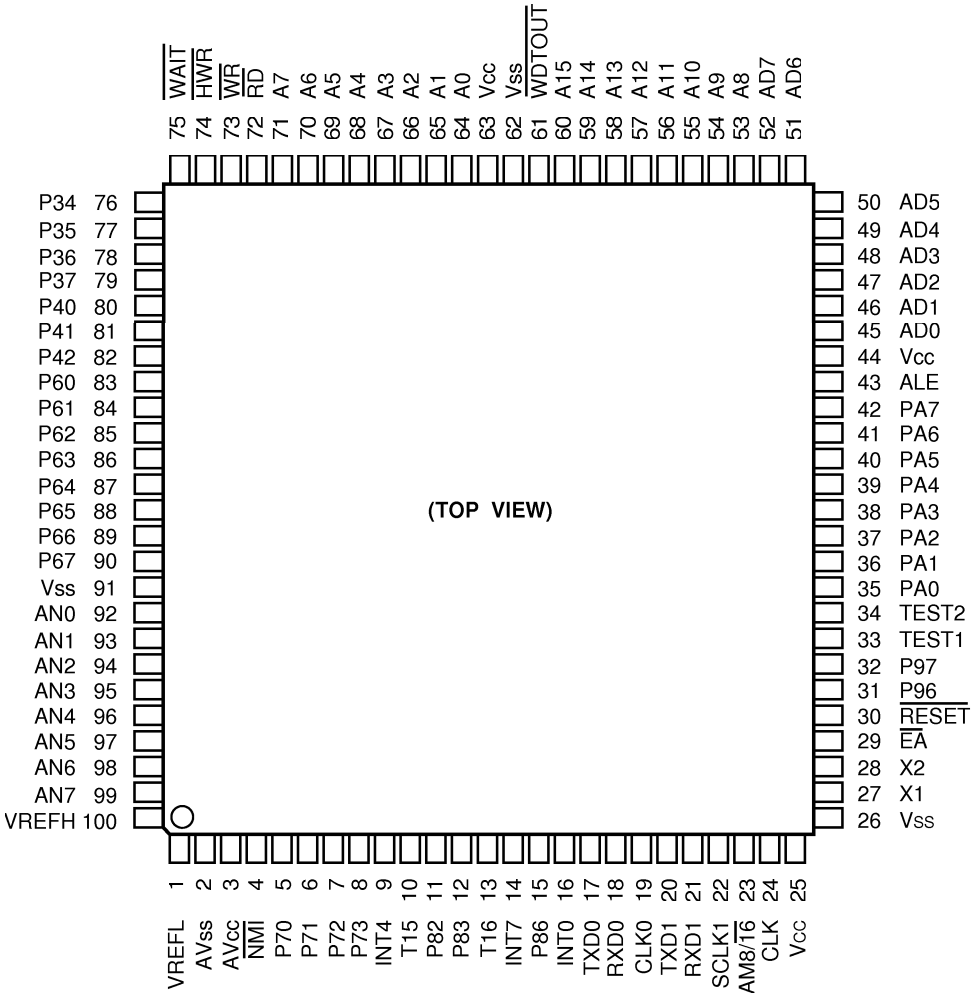


(TOP VIEW)

Truth Table

Inputs		Output
IN1	IN2	
L	L	H
H	L	L
L	H	L
H	H	L

5.10. IC8 on the Digital Board is using the CMOS 16-Bit Microprocessor IC YWTMP93PS40F.
Description of this IC is as follows:



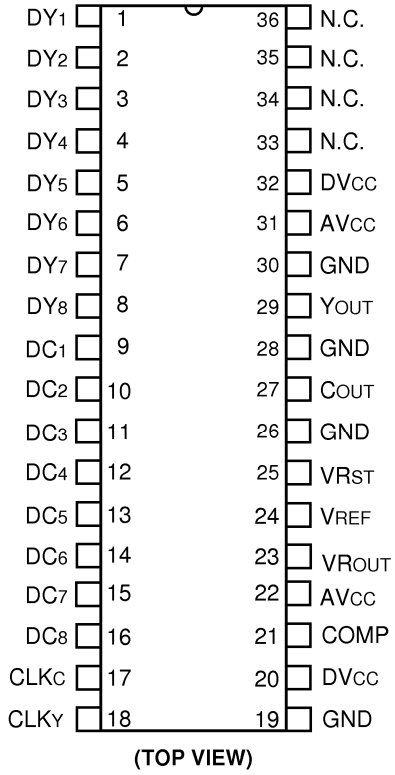
Pin	Name	I/O	Description
1	VREFL	I	Low Reference Voltage supply terminal.
2	AVss	–	Ground terminal.
3	AVcc	–	Power supply terminal.
4	$\overline{NMI}$	I	Non Maskable Interupt signal input terminal.
5	P70	I	POT-SDA signal input terminal.
6	P71	I	POT-SCL signal input terminal.
7	P72	I/O	Not used.
8	P73	I/O	Not used.
9	INT4	I	PCK signal input terminal.
10	TI5	I	FVD signal input terminal.
11	P82	I/O	Not used.
12	P83	I/O	Not used.
13	TI5	I	TCK signal input terminal.
14	INT7	I	P/T INT signal input terminal.
15	P86	I/O	Not used.

Pin	Name	I/O	Description
16	INT0	I	BEND signal input terminal.
17	TXD0	O	TX Data output terminal.
18	RXD0	I	RX Data output terminal.
19	CLK0	O	Clock pulse output terminal.
20	TXD1	O	TX Data output terminal.
21	RXD1	I	RX Data output terminal.
22	SCLK1	O	Serial Clock pulse output terminal.
23	AM8/$\overline{16}$	I	AM8/$\overline{16}$ signal input terminal.
24	CLK	O	Clock pulse output terminal.
25	AVcc	–	Power supply terminal.
26	AVss	–	Ground terminal.
27	X1	I	Oscillator input terminal.
28	X2	O	Oscillator output terminal.
29	$\overline{EA}$	I	$\overline{EA}$ signal input terminal.
30	$\overline{RESET}$	I	Reset pulse input terminal.

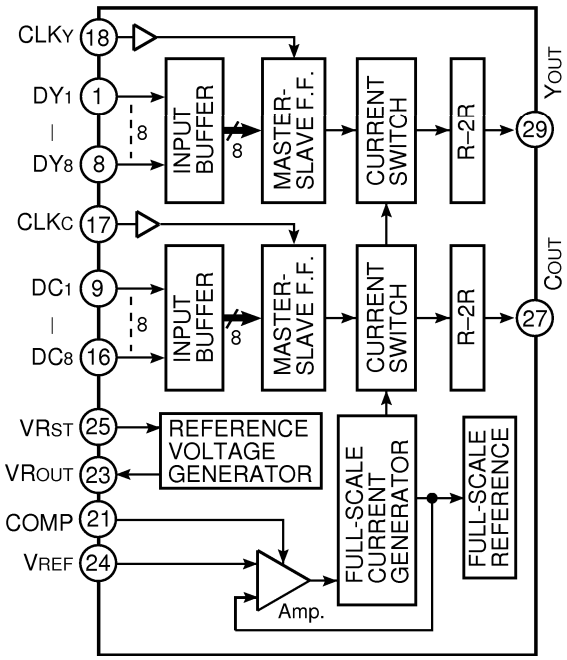
Pin	Name	I/O	Description
31	P96	I	Not used.
32	P97	I	Not used.
33	TEST1	I	Test erminals.
34	TEST2	I	
35	PA0	O	Chip Select signal output terminal.
36	PA1	O	LD signal output terminal.
37	PA2	O	TG-CS signal output terminal.
38	PA3	O	LENS CS signal output terminal.
39	PA4	O	SVDA P-LD signal output terminal.
40	PA5	O	SVPS CS signal output terminal.
41	PA6	O	SVDA T-LD signal output terminal.
42	PA7	O	Chip Select signal output terminal.
43	ALE	O	Not used.
44	Vcc	–	Power supply terminal.
45	D0	I/O	Data input/output terminals. (8-Bit)
46	D1	I/O	
47	D2	I/O	
48	D3	I/O	
49	D4	I/O	
50	D5	I/O	
51	D6	I/O	
52	D7	I/O	
53	A8	O	Address signal output terminals. (16-Bit)
54	A9	O	
55	A10	O	
56	A11	O	
57	A12	O	
58	A13	O	
59	A14	O	
60	A15	O	
61	$\overline{\text{WDTOUT}}$	O	WDTOUT signal output terminal.
62	GND	–	Ground terminal.
63	Vcc	–	Power supply terminal.
64	A0	O	Address signal output terminals. (16-Bit)
65	A1	O	
66	A2	O	
67	A3	O	
68	A4	O	
69	A5	O	
70	A6	O	
71	A7	O	
72	$\overline{\text{RD}}$	O	Read signal output terminal.
73	$\overline{\text{WR}}$	O	Write signal output terminal.
74	$\overline{\text{HWR}}$	O	Not used.
75	$\overline{\text{WAIT}}$	O	Not used.
76	P34	I	Not used.

Pin	Name	I/O	Description
77	P35	I	Not used.
78	P36	I	Not used.
79	P37	I	Not used.
80	P40	I	Not used.
81	P41	I	Not used.
82	P42	I	Not used.
83	P60	I	Field pulse input terminal.
84	P61	I	NTSC/PAL Select signal input terminal.
85	P62	O	Write Protect signal output terminal.
86	P63	O	Strobe signal output terminal.
87	P64	I	EVR Test signal input terminal.
88	P65	I	Line Lock Detect signal output terminal.
89	P66	I	Not used.
90	P67	I	Not used.
91	Vss	–	Ground terminal.
92	AN0	I	Not used.
93	AN1	I	Not used.
94	AN2	I	IRIS-INF signal input terminal.
95	AN3	I	Not used.
96	AN4	I	Not used.
97	AN5	I	Not used.
98	AN6	I	Not used.
99	AN7	I	Not used.
100	VREFH	I	High Reference Voltage supply terminal.

5.11. IC11 on the Digital Board is using the 2-ch 8-BIT D/A Converter IC YWUPC664GS.
Description of this IC is as follows:

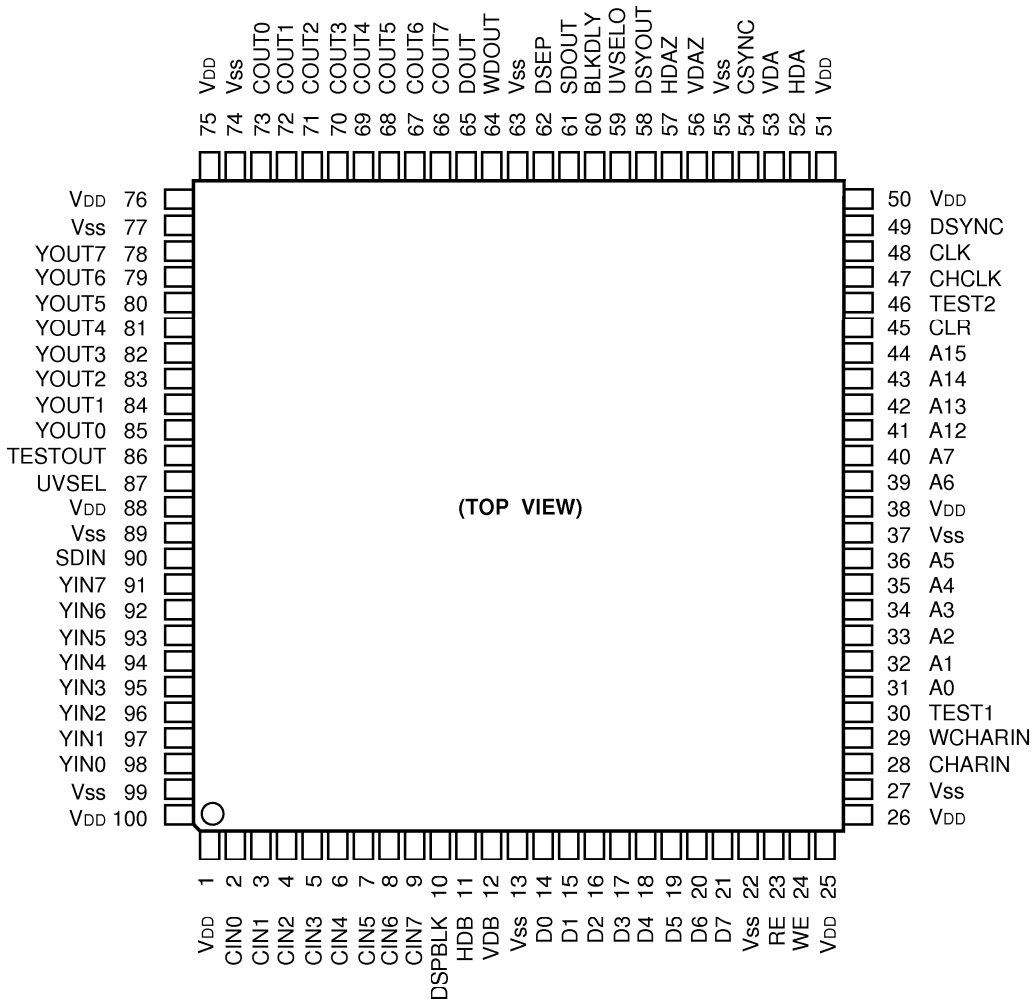


(TOP VIEW)



Pin	Name	I/O	Description
1	DY1	I	Luminance Data input terminal. (8-Bit)
2	DY2	I	
3	DY3	I	
4	DY4	I	
5	DY5	I	
6	DY6	I	
7	DY7	I	
8	DY8	I	
9	DC1	I	Chrominance Data input terminal. (8-Bit)
10	DC2	I	
11	DC3	I	
12	DC4	I	
13	DC5	I	
14	DC6	I	
15	DC7	I	
16	DC8	I	
17	CLKC	I	C Clock Pulse input terminal.
18	CLKY	I	Y Clock Pulse input terminal.
19	GND	–	Ground terminal.
20	DVCC	–	Power Supply terminal for Digital Circuit.
21	COMP	I	Phase Compensation input terminal.
22	AVCC	–	Power supply terminal for Analog Circuit.
23	VROUT	O	Reference Voltage output terminal.
24	VREF	I	Reference Voltage input terminal.
25	VRST	I	Reference Voltage adjustment terminal.
26	GND	–	Ground terminal.
27	COUT	O	Chrominance signal output terminal.
28	GND	–	Ground terminal.
29	YOUT	O	Luminance signal output terminal.
30	GND	–	Ground terminal.
31	AVCC	–	Power supply terminal for Analog Circuit.
32	DVCC	–	Power supply terminal for Digital Circuit.
33	N.C.	–	Non Connection.
34	N.C.	–	Non Connection.
35	N.C.	–	Non Connection.
36	N.C.	–	Non Connection.

5.12. IC17 on the Digital Board is using the Gate Array Logic IC YWL7A1219.
Description of this IC is as follows:



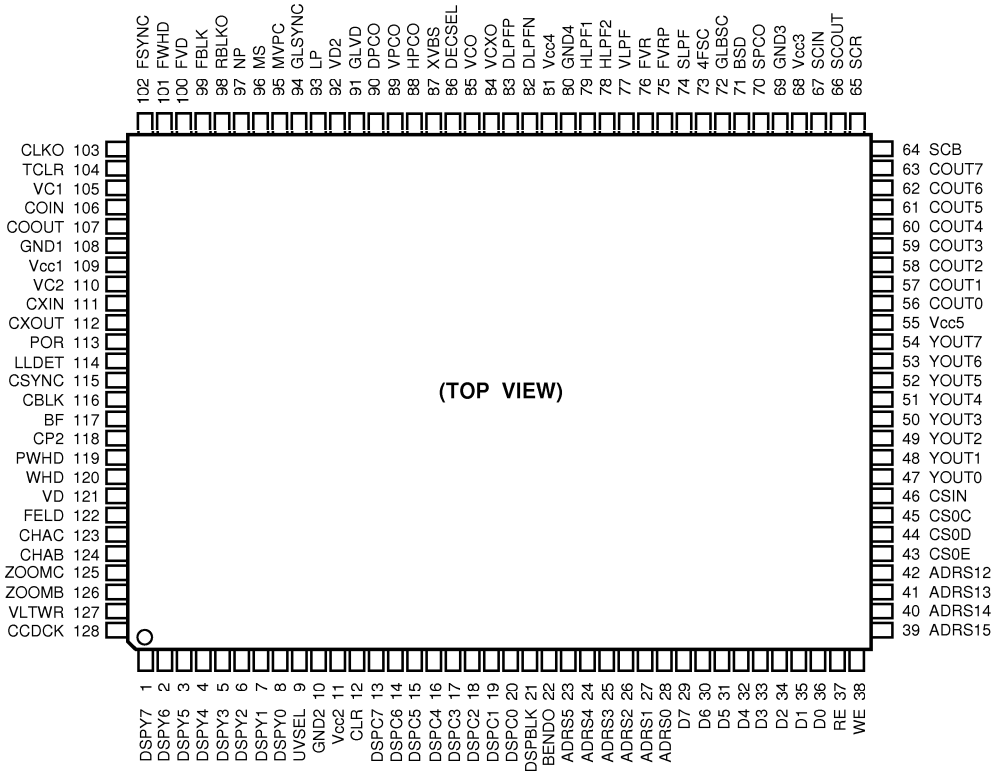
Pin	Name	I/O	Description
1	VDD	–	Power supply terminal.
2	CIN0	I	Chrominance Data input terminals. (8-Bit)
3	CIN1	I	
4	CIN2	I	
5	CIN3	I	
6	CIN4	I	
7	CIN5	I	
8	CIN6	I	
9	CIN7	I	
10	DSPBLK	I	Digital Blanking Pulse input terminal.
11	HDB	I	HD signal input terminal.
12	VDB	I	VD signal input terminal.
13	Vss	–	Ground terminal.
14	D0	O	Data output terminals. (8-Bit)
15	D1	O	

Pin	Name	I/O	Description
16	D2	O	Data output terminals. (8-Bit)
17	D3	O	
18	D4	O	
19	D5	O	
20	D6	O	
21	D7	O	
22	Vss	–	Ground terminal.
23	RE	I	Read Enable signal input terminal.
24	WE	I	Write Enable signal input terminal.
25	VDD	–	Power supply terminal.
26	VDD	–	Power supply terminal.
27	Vss	–	Ground terminal.
28	CHARIN	I	Character signal input terminal.
29	WCHARIN	I	Character signal input terminal.
30	TEST1	I	Test terminal.

Pin	Name	I/O	Description
31	A0	I	Address signal input terminals.
32	A1	I	
33	A2	I	
34	A3	I	
35	A4	I	
36	A5	I	
37	Vss	–	Ground terminal.
38	VDD	–	Power supply terminal.
39	A6	I	Address signal input terminals.
40	A7	I	
41	A12	I	
42	A13	I	
43	A14	I	
44	A15	I	
45	CLR	I	Clear signal input terminal.
46	TEST2	I	Test terminal.
47	CHCLK	I	Clock Pulse input terminal.
48	CLK	I	Clock Pulse input terminal.
49	DSYNC	I	D-Sync signal input terminal.
50	VDD	–	Power supply terminal.
51	VDD	–	Power supply terminal.
52	HDA	I	HD signal input terminal.
53	VDA	I	VD signal input terminal.
54	CSYNC	I	Composite Sync signal input terminal.
55	Vss	–	Ground terminal.
56	VDAZ	O	VD signal output terminal.
57	HDAZ	O	HD signal output terminal.
58	DSYOUT	O	D-Sync signal output terminal.
59	UVSELO	O	UV Selection signal output terminal.
60	BLKDLY	O	Blanking Pulse output terminal.
61	SDOUT	O	SD signal output terminal.
62	DSEP	O	DSEP signal output terminal.
63	Vss	–	Ground terminal.
64	WDOUT	O	Character signal output terminal.
65	DOUT	O	Character signal output terminal.
66	COUT7	O	Chrominance Data output terminals. (8-Bit)
67	COUT6	O	
68	COUT5	O	
69	COUT4	O	
70	COUT3	O	
71	COUT2	O	
72	COUT1	O	
73	COUT0	O	
74	Vss	–	Ground terminal.
75	VDD	–	Power supply terminal.
76	VDD	–	Power supply terminal.

Pin	Name	I/O	Description
77	Vss	–	Ground terminal.
78	YOUT7	O	Luminance Data output terminals. (8-Bit)
79	YOUT6	O	
80	YOUT5	O	
81	YOUT4	O	
82	YOUT3	O	
83	YOUT2	O	
84	YOUT1	O	
85	YOUT0	O	
86	TESTOUT	O	Test terminal.
87	UVSEL	I	UV Selection signal input terminal.
88	VDD	–	Power supply terminal.
89	Vss	–	Ground terminal.
90	SDIN	I	SD signal input terminal.
91	YIN7	I	Luminance Data input terminals. (8-Bit)
92	YIN6	I	
93	YIN5	I	
94	YIN4	I	
95	YIN3	I	
96	YIN2	I	
97	YIN1	I	
98	YIN0	I	
99	Vss	–	Ground terminal.
100	VDD	–	Power supply terminal.

5.13. IC9 on the Digital Board is using the Digital Encoder IC YWCF45811PGJ.
Description of this IC is as follows:



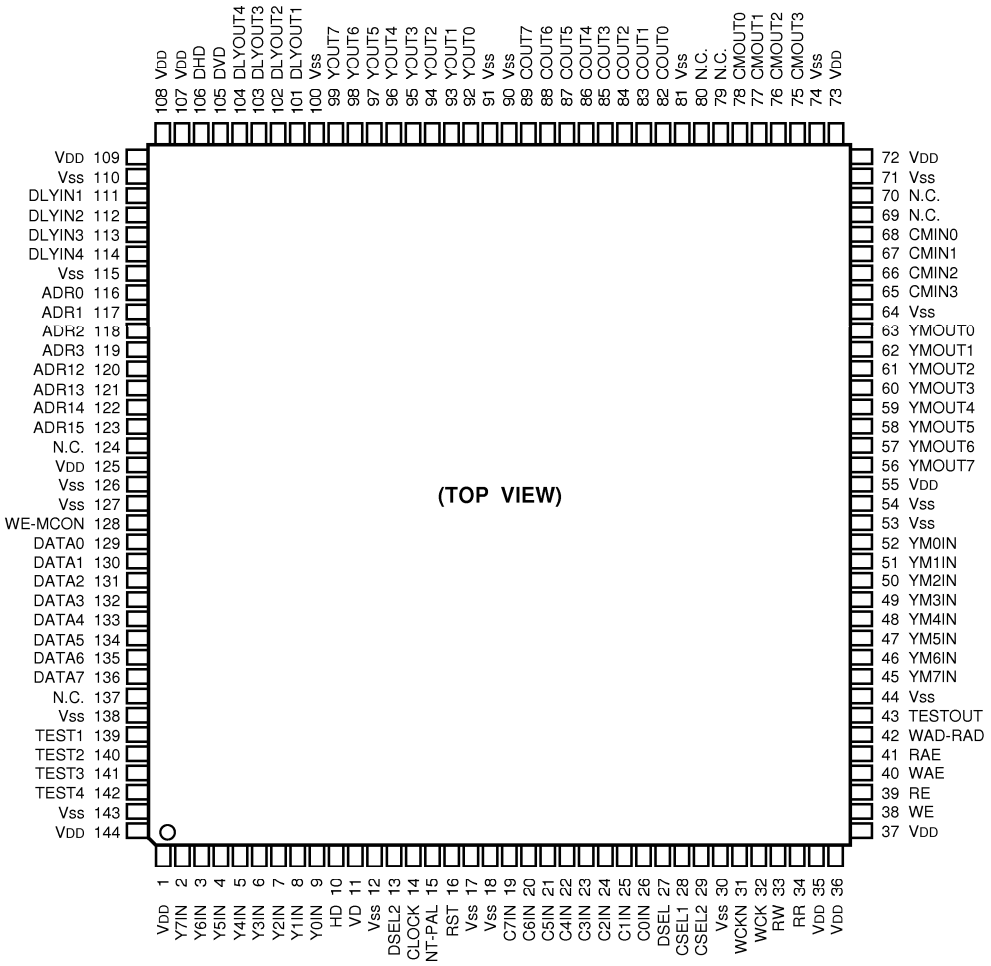
Pin	Name	I/O	Description
1	DSPY7	I	Luminance Data input terminals. (8-Bit)
2	DSPY6	I	
3	DSPY5	I	
4	DSPY4	I	
5	DSPY3	I	
6	DSPY2	I	
7	DSPY1	I	
8	DSPY0	I	
9	UVSEL	I	UV Selection signal input terminal.
10	GND2	–	Ground terminal.
11	Vcc2	–	Power supply terminal.
12	CLR	I	Clear Pulse input terminal.
13	DSPC7	I	Chrominance Data input terminals. (8-Bit)
14	DSPC6	I	
15	DSPC5	I	
16	DSPC4	I	
17	DSPC3	I	
18	DSPC2	I	
19	DSPC1	I	
20	DSPC0	I	
21	DSPBLK	I	Blanking Pulse input terminal for Digital circuit.

Pin	Name	I/O	Description
22	BENDO	O	Border End Pulse output terminal.
23	ADRS5	I	Address signal input terminals.
24	ADRS4	I	
25	ADRS3	I	
26	ADRS2	I	
27	ADRS1	I	
28	ADRS0	I	
29	D7	I/O	Data input/output terminals. (8-Bit)
30	D6	I/O	
31	D5	I/O	
32	D4	I/O	
33	D3	I/O	
34	D2	I/O	
35	D1	I/O	
36	D0	I/O	
37	RE	I	Read Enable signal input terminal.
38	WE	I	Write Enable signal input terminal.
39	ADRS15	I	Address signal input terminals.
40	ADRS14	I	
41	ADRS13	I	
42	ADRS12	I	

Pin	Name	I/O	Description
43	CS0E	O	Chip Select signal output terminal.
44	CS0D	O	Chip Select signal output terminal.
45	CS0C	O	Chip Select signal output terminal.
46	CSIN	I	Chip Select signal input terminal.
47	YOUT0	O	Luminance Data output terminals. (8-Bit)
48	YOUT1	O	
49	YOUT2	O	
50	YOUT3	O	
51	YOUT4	O	
52	YOUT5	O	
53	YOUT6	O	
54	YOUT7	O	
55	Vcc5	–	Power supply terminal.
56	COUT0	O	Chrominance Data output terminals. (8-Bit)
57	COUT1	O	
58	COUT2	O	
59	COUT3	O	
60	COUT4	O	
61	COUT5	O	
62	COUT6	O	
63	COUT7	O	
64	SCB	I/O	Bch SC signal input/output terminal.
65	SCR	I/O	Rch SC signal input/output terminal.
66	SCOUT	O	SC signal output terminal.
67	SCIN	I	SC signal input terminal.
68	Vcc3	–	Power supply terminal.
69	GND3	–	Ground terminal.
70	SPCO	O	Phase Comparator output terminal.
71	BSD	I	Burst Detect signal input terminal.
72	GLBSC	I	G/L Burst signal input terminal.
73	4FSC	O	4FSC Clock Pulse output terminal.
74	SLPF	I	SLPF signal input terminal.
75	FVRP	I	FVRP signal input terminal.
76	FVR	I	FVR signal input terminal.
77	VLPF	I	VLPF signal input terminal.
78	HLPF2	I	HLPF2 signal input terminal.
79	HLPF1	I	HLPF1 signal input terminal.
80	GND4	–	Ground terminal.
81	Vcc4	–	Power supply terminal.
82	DLPFN	I	DLPFN signal input terminal.
83	DLPFP	I	DLPFP signal input terminal.
84	VCXO	O	VCXO signal output terminal.
85	VCO	O	VCO signal input terminal.
86	DECSEL	I	DECSEL signal input terminal.
87	XVBS	O	XVBS signal output terminal.
88	HPCO	O	Horizontal Phase Comparator output terminal.

Pin	Name	I/O	Description
89	VPCO	O	Vertical Phase Comparator output terminal.
90	DPCO	O	Phase Comparator output terminal.
91	GLVD	I	G/L VD signal input terminal.
92	VD2	I	VD2 signal input terminal.
93	LP	I	LP signal input terminal.
94	GLSYNC	I	G/L Sync signal input terminal.
95	MVPC	I	MVPC signal input terminal.
96	MS	I	MS signal input terminal.
97	NP	I	NTSC/PAL Selection signal input terminal.
98	RBLKO	I/O	Blanking Pulse input/output terminal.
99	FBLK	O	Blanking Pulse output terminal.
100	FVD	O	FVD signal input terminal.
101	FWHD	O	FWHD signal output terminal.
102	FSYNC	O	FSYNC signal output terminal.
103	CLKO	O	Clock Pulse output terminal.
104	TCLR	I	TCLR signal input terminal.
105	VC1	O	VC1 signal output terminal.
106	COIN	I	Phase Comparator input terminal.
107	COOUT	O	Phase Comparator output terminal.
108	GND1	–	Ground terminal.
109	Vcc1	–	Power supply terminal.
110	VC2	O	VC2 signal output terminal.
111	CXIN	I	Phase Comparator input terminal.
112	CXOUT	O	Phase Comparator output terminal.
113	POR	I	POR signal input terminal.
114	LLDET	I	Line Lock Detect signal input terminal.
115	CSYNC	O	Composite Sync signal output terminal.
116	CBLK	O	Composite Blanking Pulse output terminal.
117	BF	I/O	Burst Flag signal input/output terminal.
118	CP2	O	Clamp Pulse output terminal.
119	PWHD	I	PWHD signal input terminal.
120	WHD	I/O	WHD signal input/output terminal.
121	VD	O	VD signal output terminal.
122	FELD	I/O	FELD signal input/output terminal.
123	CHAC	I	Character signal input terminal.
124	CHAB	I	Character signal input terminal.
125	ZOOMC	I	ZOOMC signal input terminal.
126	ZOOMB	I	ZOOMB signal input terminal.
127	VLTWR	I	VLTWR signal input terminal.
128	CCDCK	I	CCDCK signal input terminal.

5.14. IC13 on the Digital Board is using the Memory Control Gate Array Logic IC YWL7A1220.
Description of this IC is as follows:



Pin	Name	I/O	Description
1	VDD	–	Power supply terminal.
2	Y7IN	I	Luminance Data input terminals. (8-Bit)
3	Y6IN	I	
4	Y5IN	I	
5	Y4IN	I	
6	Y3IN	I	
7	Y2IN	I	
8	Y1IN	I	
9	Y0IN	I	
10	HD	I	HD signal input terminal.
11	VD	I	VD signal input terminal.
12	Vss	–	Ground terminal.
13	DSEL2	I	DSEL2 signal input terminal.
14	CLOCK	I	Clock Pulse input terminal.
15	NT-PAL	I	NTSC/PAL selection terminal.

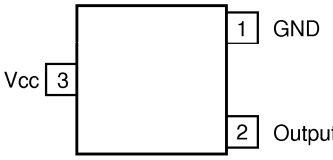
Pin	Name	I/O	Description
16	RST	I	Reset Pulse input terminal.
17	Vss	–	Ground terminal.
18	Vss	–	Ground terminal.
19	C7IN	I	Chrominance Data input terminals. (8-Bit)
20	C6IN	I	
21	C5IN	I	
22	C4IN	I	
23	C3IN	I	
24	C2IN	I	
25	C1IN	I	
26	C0IN	I	
27	DSEL	I	DSEL signal input terminal.
28	CSEL1	I	Chip Select signal input terminal.
29	CSEL2	I	Chip Select signal input terminal.
30	Vss	–	Ground terminal.

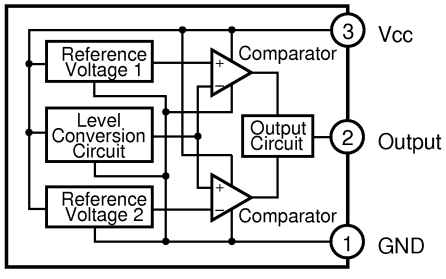
Pin	Name	I/O	Description
31	WCKN	O	Write Clock pulse output terminal.
32	WCK	O	Write Clock pulse output terminal.
33	RW	O	RW signal output terminal.
34	RR	O	RR signal output terminal.
35	VDD	–	Power supply terminal.
36	VDD	–	Power supply terminal.
37	VDD	–	Power supply terminal.
38	WE	O	Write Enable signal output terminal.
39	RE	O	Read Enable signal output terminal.
40	WAE	O	WAE signal output terminal.
41	RAE	O	RAE signal output terminal.
42	WAD-RAD	O	WAD-RAD signal output terminal.
43	TESTOUT	O	TEST signal output terminal.
44	Vss	–	Ground terminal.
45	YM7IN	I	YM signal input terminals. (8-Bit)
46	YM6IN	I	
47	YM5IN	I	
48	YM4IN	I	
49	YM3IN	I	
50	YM2IN	I	
51	YM1IN	I	
52	YM0IN	I	
53	Vss	–	Ground terminal.
54	Vss	–	Ground terminal.
55	VDD	–	Power supply terminal.
56	YMOUT7	O	YM signal output terminals. (8-Bit)
57	YMOUT6	O	
58	YMOUT5	O	
59	YMOUT4	O	
60	YMOUT3	O	
61	YMOUT2	O	
62	YMOUT1	O	
63	YMOUT0	O	
64	Vss	–	Ground terminal.
65	CMIN3	I	CM signal input terminals. (4-Bit)
66	CMIN2	I	
67	CMIN1	I	
68	CMIN0	I	
69	N.C.	–	Non connection.
70	N.C.	–	Non connection.
71	Vss	–	Ground terminal.
72	VDD	–	Power supply terminal.
73	VDD	–	Power supply terminal.
74	Vss	–	Ground terminal.

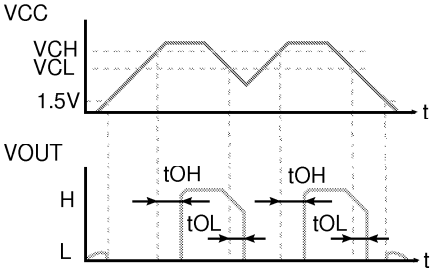
Pin	Name	I/O	Description
75	CMOUT3	O	CM signal output terminals. (4-Bit)
76	CMOUT2	O	
77	CMOUT1	O	
78	CMOUT0	O	
79	N.C.	–	Non connection.
80	N.C.	–	Non connection.
81	Vss	–	Ground terminal.
82	COUT0	O	Chrominance signal output terminals. (8-Bit)
83	COUT1	O	
84	COUT2	O	
85	COUT3	O	
86	COUT4	O	
87	COUT5	O	
88	COUT6	O	
89	COUT7	O	
90	Vss	–	Ground terminal.
91	Vss	–	Ground terminal.
92	YOUT0	O	Luminance signal output terminals. (8-Bit)
93	YOUT1	O	
94	YOUT2	O	
95	YOUT3	O	
96	YOUT4	O	
97	YOUT5	O	
98	YOUT6	O	
99	YOUT7	O	
100	Vss	–	Ground terminal.
101	DLYOUT1	O	DLY signal output terminals. (4-Bit)
102	DLYOUT2	O	
103	DLYOUT3	O	
104	DLYOUT4	O	
105	DVD	O	DVD signal output terminal.
106	DHD	O	DHD signal output terminal.
107	VDD	–	Power supply terminal.
108	VDD	–	Power supply terminal.
109	VDD	–	Power supply terminal.
110	Vss	–	Ground terminal.
111	DLYIN1	I	DLY signal input terminals. (4-Bit)
112	DLYIN2	I	
113	DLYIN3	I	
114	DLYIN4	I	
115	Vss	–	Ground terminal.
116	ADR0	I	Address signal input terminals.
117	ADR1	I	
118	ADR2	I	
119	ADR3	I	

Pin	Name	I/O	Description
120	ADR12	I	Address signal input terminals.
121	ADR13	I	
122	ADR14	I	
123	ADR15	I	
124	N.C.	–	Non connection.
125	VDD	–	Power supply terminal.
126	Vss	–	Ground terminal.
127	Vss	–	Ground terminal.
128	WE-MCON	I	WE-MCON signal input terminal.
129	DATA0	I	Data input terminals. (8-Bit)
130	DATA1	I	
131	DATA2	I	
132	DATA3	I	
133	DATA4	I	
134	DATA5	I	
135	DATA6	I	
136	DATA7	I	
137	N.C.	–	Non connection.
138	Vss	–	Ground terminal.
139	TEST1	I	Test terminals.
140	TEST2	I	
141	TEST3	I	
142	TEST4	I	
143	Vss	–	Ground terminal.
144	VDD	–	Power supply terminal.

5.15. IC2 on the Digital Board and IC14 on the Auto Focus Board are using the 3.5V Reset IC MN13821.
Description of this IC is as follows:

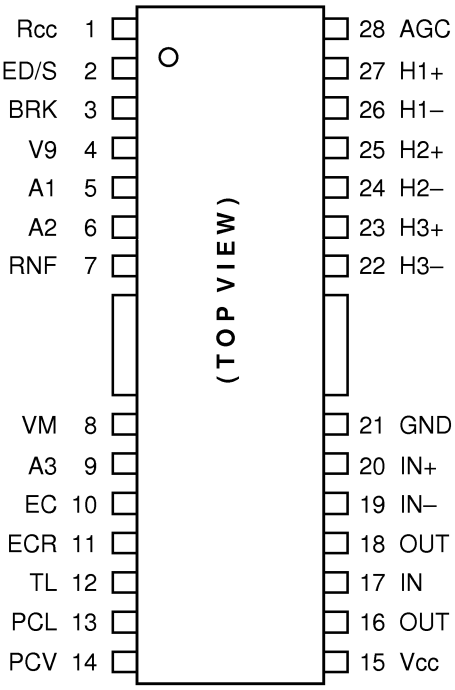


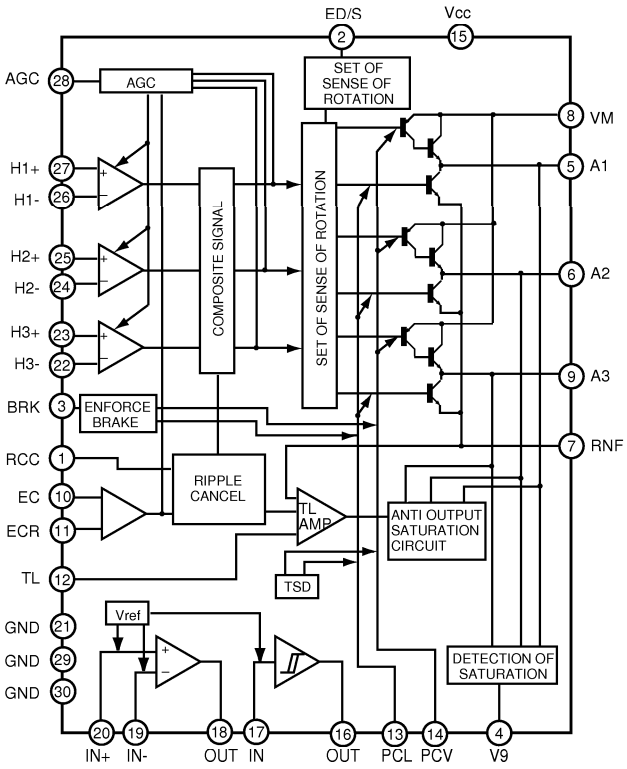




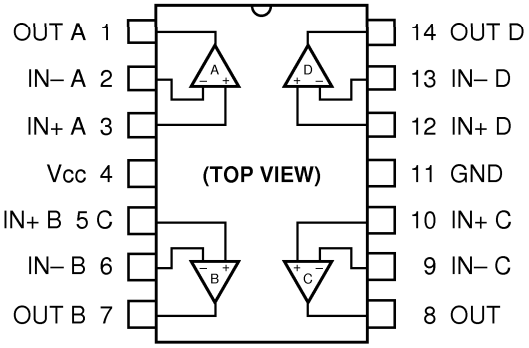
6. Motor Drive Board

6.1. IC4 on the Motor Drive Board is using the 3-Phase Motor Driver IC YWBA6441FP.
Description of this IC is as follows:



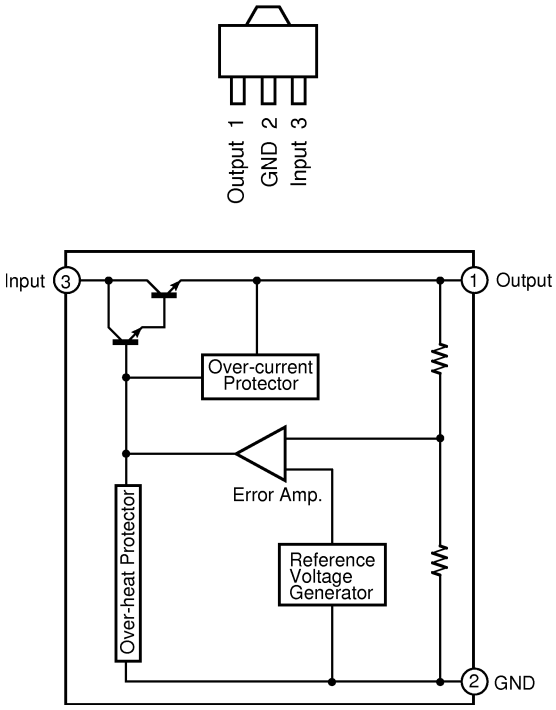


6.2. IC6 on the Motor Drive Board is using the Quad Single-voltage Supply Operational Amplifiers IC YWNJM 2902VT1.
Description of this IC is as follows:

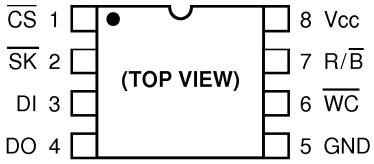


7. Auto Focus Board

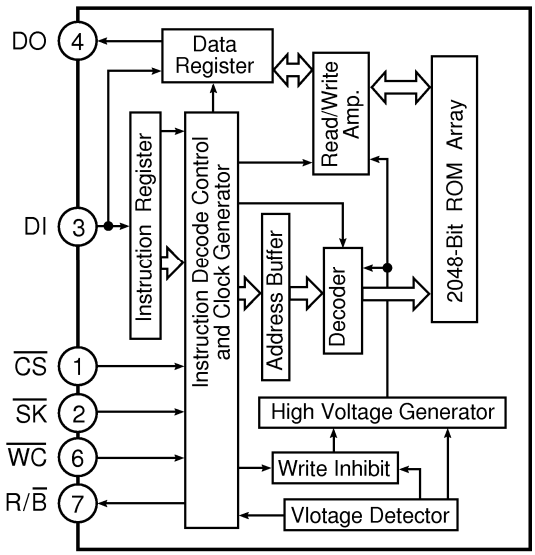
7.1. IC15 on the Auto Focus Board is using the 3-Terminal Voltage Regulator IC AN8005ME1.
Description of this IC is as follows:



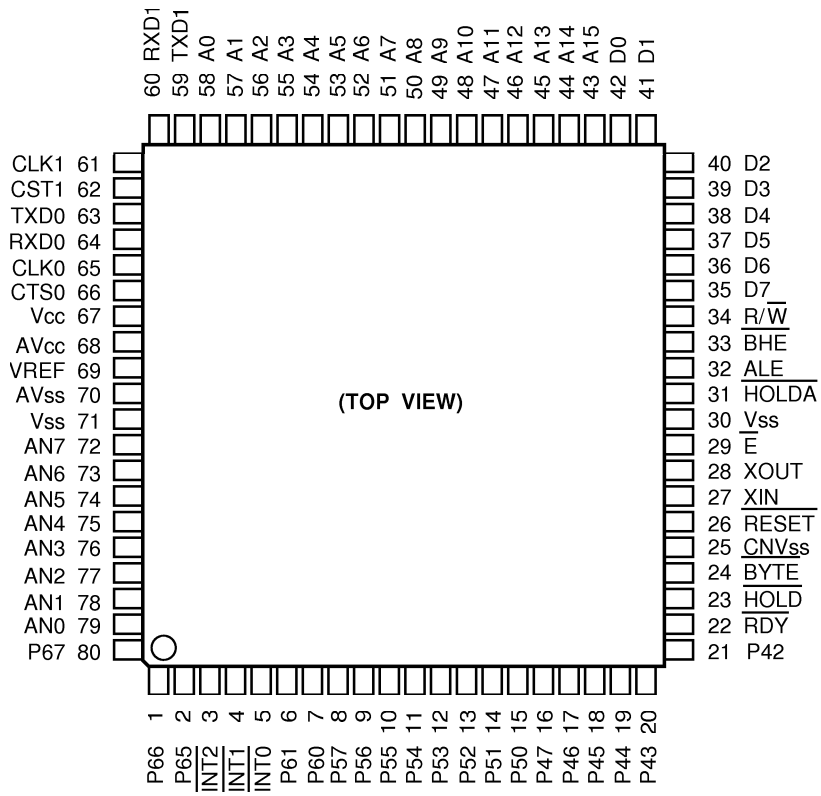
7.2. IC10 on the Auto Focus Board is using the 2K (128 X 16- Bit) Serial EEPROM IC YWBR9020FE1.
Description of this IC is as follows:



Pin	Name	I/O	Description
1	$\overline{CS}$	I	Chip Select signal input terminal.
2	$\overline{SK}$	I	Serial Data Clock Pulse input terminal.
3	DI	I	Serial Data input terminal.
4	DO	O	Serial Data output terminal.
5	GND	–	Ground terminal.
6	$\overline{WC}$	I	Write Control signal input terminal.
7	R/$\overline{B}$	O	Ready/$\overline{Busy}$ Status signal output terminal.
8	Vcc	–	Power supply terminal.



7.3. IC12 on the Auto Focus Board is using the 8-bit single Chip Microprocessor IC YW7702P4L466.
Description of this IC is as follows:

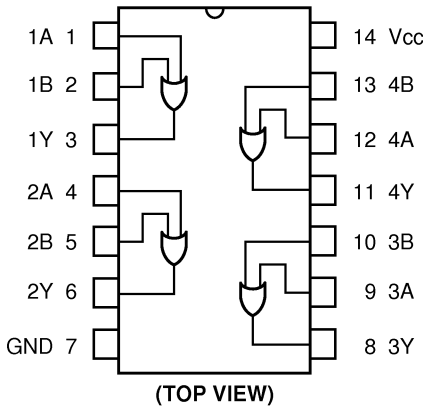


Pin	Name	I/O	Description
1	P66	O	EPROM Reset Pulse output terminal.
2	P65	O	EPROM Chip Select signal output terminal.
3	$\overline{\text{INT2}}$	I	Reset Pulse Input terminal.
4	$\overline{\text{INT1}}$	I	VD signal Input terminal.
5	$\overline{\text{INT0}}$	I	IRQIM signal Input terminal.
6	P61	O	Not used.
7	P60	O	Zoom Enable output terminal.
8	P57	O	VB signal output terminal.
9	P56	O	LVL signal output terminal.
10	P55	O	VMVL signal output terminal.
11	P54	O	DRK signal output terminal.
12	P53	O	Not used.
13	P52	O	Not used.
14	P51	O	Not used.
15	P50	O	Not used.
16	P47	O	Zoom CW/CCW Control signal output terminal.

Pin	Name	I/O	Description
17	P46	O	Zoom Clock Pulse output terminal.
18	P45	O	Focus Clock Pulse output terminal.
19	P44	O	Focus CW/CCW Control signal output terminal.
20	P43	O	Focus Enable signal output terminal.
21	P42	O	LD signal output terminal.
22	$\overline{\text{RDY}}$	I	Ready signal input terminal.
23	$\overline{\text{HOLD}}$	I	Hold signal input terminal.
24	$\overline{\text{BYTE}}$	I	Byte signal input terminal.
25	CNVss	–	Ground terminal.
26	$\overline{\text{RESET}}$	I	Reset Pulse input terminal.
27	XIN	I	Crystal connecting terminals.
28	XOUT	O	
29	$\overline{\text{E}}$	O	$\overline{\text{E}}$ signal Output terminal.
30	Vss	–	Ground terminal.
31	$\overline{\text{HOLDA}}$	O	Not used.
32	ALE	O	Not used.

Pin	Name	I/O	Description
33	$\overline{BHE}$	O	Not used.
34	R/$\overline{W}$	O	Read/Write signal output terminal.
35	D7	I/O	Data input/output terminals. (8-Bit)
36	D6	I/O	
37	D5	I/O	
38	D4	I/O	
39	D3	I/O	
40	D2	I/O	
41	D1	I/O	
42	D0	I/O	
43	A15	O	Address signal output terminals. (16-Bit)
44	A14	O	
45	A13	O	
46	A12	O	
47	A11	O	
48	A10	O	
49	A9	O	
50	A8	O	
51	A7	O	
52	A6	O	
53	A5	O	
54	A4	O	
55	A3	O	
56	A2	O	
57	A1	O	
58	A0	O	
59	TXD1	O	Serial Data output terminal.
60	RXD1	I	Serial Data input terminal.
61	CLK1	O	Clock Pulse output terminal.
62	CST1	I	Not used.
63	TXD0	O	Serial Data output terminal.
64	RXD0	O	Serial Data output terminal.
65	CLK0	O	Clock Pulse output terminal.
66	CTS0	I	Not used.
67	Vcc	–	Power supply terminal.
68	AVcc	–	Power supply terminal for Analog circuit.
69	VREF	–	Reference Voltage terminal.
70	AVss	–	Ground terminal for Analog circuit.
71	Vss	–	Ground terminal.
72	AN7	I	Not used.
73	AN6	I	Field signal input terminal.
74	AN5	O	AN5 signal output terminal.
75	AN4	O	AN4 signal output terminal.
76	AN3	O	AN3 signal output terminal.
77	AN2	I	IRIS-INF signal input terminal.
78	AN1	O	AN1 signal output terminal.
79	AN0	O	AN0 signal output terminal.
80	P63	I	Busy signal input terminal.

7.4. IC11 on the Auto Focus Board is using the the Single 2-Input OR Gate IC YWTC74VC32FS.
Description of this IC is as follows:

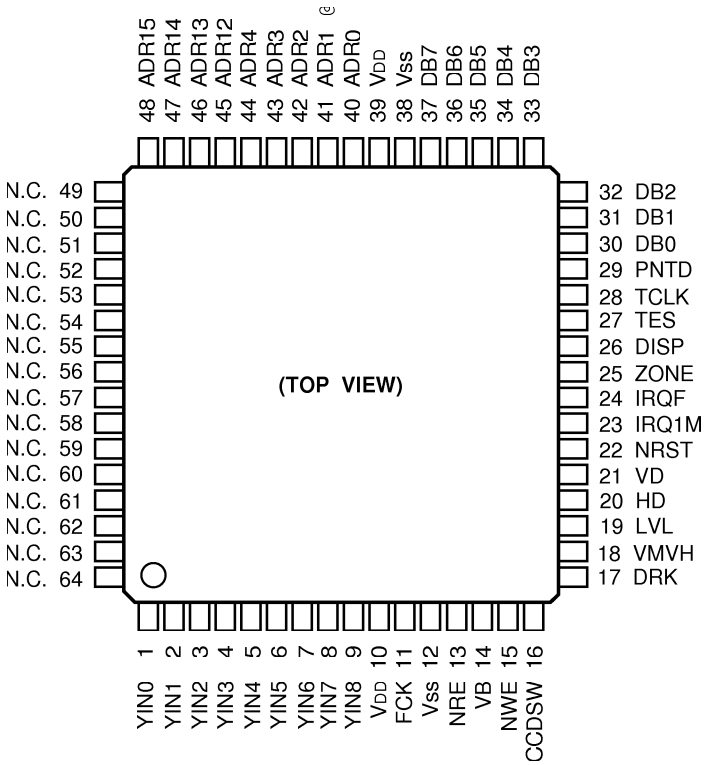


(TOP VIEW)

Truth Table

INPUTS		OUTPUT
A	B	Y
L	L	L
L	H	H
H	L	H
H	H	H

7.5. IC6 on the Auto Focus Board is using the Auto Focus Signal Processor IC YWTC9074FL.
Description of this IC is as follows:

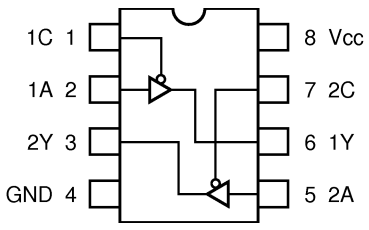


Pin	Name	I/O	Description
1	YIN0	I	Luminance Data input terminals. (9-Bit)
2	YIN1	I	
3	YIN2	I	
4	YIN3	I	
5	YIN4	I	
6	YIN5	I	
7	YIN6	I	
8	YIN7	I	
9	YIN8	I	
10	VDD	I	Power supply terminal.
11	FCK	I	System Clock pulse input terminal.
12	Vss	–	Ground terminal.
13	NRE	I	Read signal input terminal.
14	VB	I	VB signal input terminal.
15	NWE	I	NWE signal input terminal.
16	CCDSW	I	CCDSW signal input terminal.
17	DRK	I	DRK signal input terminal.
18	VMVH	I	VMVH signal input terminal.
19	LVL	I	LVL signal input terminal.
20	HD	I	HD signal input terminal.

Pin	Name	I/O	Description
21	VD	I	VD signal input terminal.
22	NRST	I	Initial reset signal input terminal.
23	IRQ1M	O	IRQ1M signal output terminal.
24	IRQF	O	IRQF signal output terminal.
25	ZONE	O	ZONE signal output terminal.
26	DISP	I	Display signal input terminal.
27	TES	I	Test signal input terminal.
28	TCLK	I	TCLK signal input terminal.
29	PNTD	I	PNTD signal input terminal.
30	DB0	I/O	Data input/output terminals. (8-Bit)
31	DB1	I/O	
32	DB2	I/O	
33	DB3	I/O	
34	DB4	I/O	
35	DB5	I/O	
36	DB6	I/O	
37	DB7	I/O	
38	Vss	–	Ground terminal.
39	VDD	–	Power supply terminal.

Pin	Name	I/O	Description
40	ADR0	I	Address signal input terminals.
41	ADR1	I	
42	ADR2	I	
43	ADR3	I	
44	ADR4	I	
45	ADR12	I	
46	ADR13	I	
47	ADR14	I	
48	ADR15	I	
49	N.C.	–	Non Connection.
50	N.C.	–	
51	N.C.	–	
52	N.C.	–	
53	N.C.	–	
54	N.C.	–	
55	N.C.	–	
56	N.C.	–	
57	N.C.	–	
58	N.C.	–	
59	N.C.	–	
60	N.C.	–	
61	N.C.	–	
62	N.C.	–	
63	N.C.	–	
64	N.C.	–	

7.6. IC19 on the Auto Focus Board is using the Single 3-State Bus Buffer IC YWTC7W125FUL.
Description of this IC is as follows:



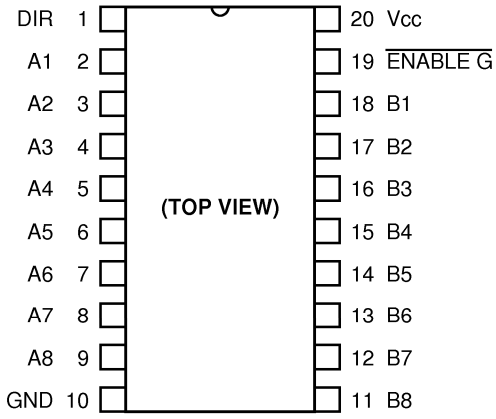
(TOP VIEW)

Truth Table

CONTROL	INPUT	OUTPUT
C	A	Y
H		High-Z
H		High-Z
L	L	L
L	H	H

: Don't care.

7.7. IC8 on the Auto Focus Board is using the Octal 3-State Bus Transceivers IC YWT74V245FSL.
Description of this IC is as follows:

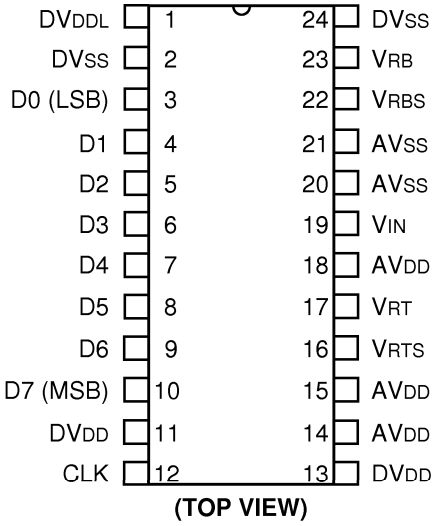


Truth Table

INPUTS		FUNCTION
DIR	ENABLE G	
H	L	A → B
L	L	B → A
✻	H	A OFF B

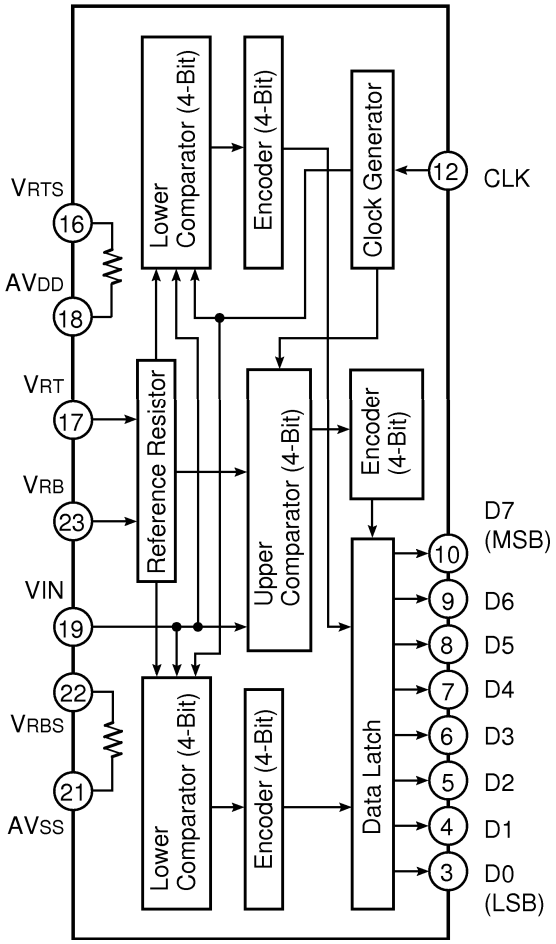
✻ : Don't care.

7.8. IC5 on the Auto Focus Board is using the 8-bit A/D Converter IC MN655431SH.
Description of this IC is as follows.

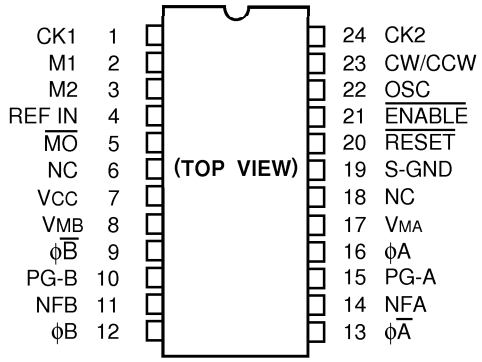


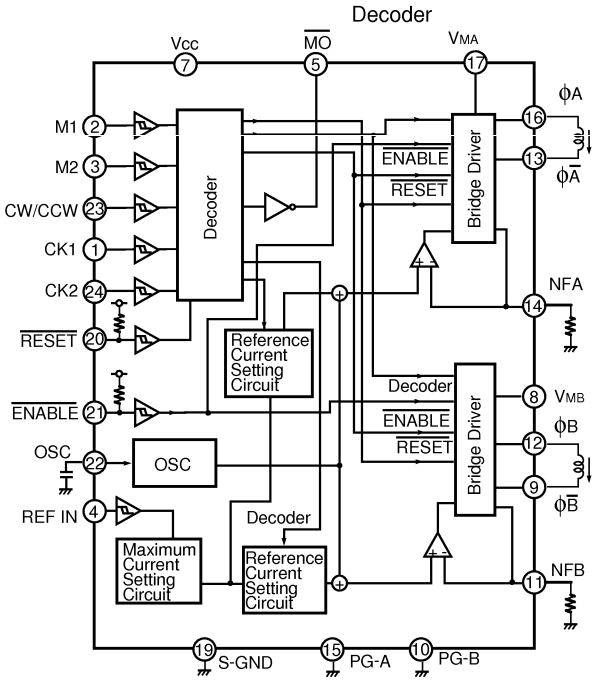
(TOP VIEW)

Pin	Name	I/O	Description
1	DVDDL	–	Power supply terminal for low-voltage-digital-output.
2	DVSS	–	Ground terminal for Digital Circuit.
3	D0	O	Data output terminals. (8-Bit)
4	D1	O	
5	D2	O	
6	D3	O	
7	D4	O	
8	D5	O	
9	D6	O	
10	D7	O	
11	DVDD	–	Power supply terminal for Digital Circuit.
12	CLK	I	Clock Pulse input terminal.
13	DVDD	–	Power supply terminal for Digital Circuit.
14	AVDD	–	Power supply terminal for Analog Circuit.
15	AVDD	–	Power supply terminal for Analog Circuit.
16	VRTS	O	Top Reference Voltage Source output terminal.
17	VRT	I	Top Reference Voltage input terminal.
18	AVDD	–	Power supply terminal for Analog Circuit.
19	VIN	I	Analog signal input terminal.
20	AVSS	–	Ground terminal for Analog Circuit.
21	AVSS	–	Ground terminal for Analog Circuit.
22	VRBS	O	Bottom Reference Voltage Source output terminal.
23	VRB	I	Bottom Reference Voltage input terminal.
24	DVSS	–	Ground terminal for Digital Circuit.



7.9. IC2 and IC3 on the Auto Focus Board are using the Control driver IC YWTB6504FL.
Description of this IC is as follows:





Pin	Name	I/O	Description
1	CK1	I	Clock Pulse input terminal.
2	M1	I	Mode Setting signal input terminals.
3	M2	I	
4	REF IN	I	Output Reference signal input terminal.
5	$\overline{MO}$	O	Monitor signal output terminal.
6	N.C.	–	Non connection.
7	Vcc	–	Power supply terminals.
8	VMB	–	
9	$\phi\overline{B}$	I	B channel inverted signal input terminal.
10	PG-B	–	Ground terminal.
11	NFB	I	B Channel current detector input terminal.
12	φB	O	B channel signal output terminal.
13	$\phi\overline{A}$	I	A channel inverted signal input terminal.
14	NFA	I	A Channel current detector input terminal.
15	PG-A	–	Ground terminal.
16	φA	O	A channel signal output terminal.
17	VMA	–	Power supply terminal.
18	N.C.	–	Non connection.
19	S-GND	–	Ground terminal.
20	$\overline{RESET}$	I	Reset Pulse input terminal.
21	$\overline{ENABLE}$	I	Enable signal input terminal.
22	OSC	I	Oscillator signal input terminal.
23	CW/CCW	I	CW/CCW signal input terminal.
24	CK2	I	Clock Pulse input terminal.

About Your Computer

In order to run the E.V.R. (Electric Variable Resistor) adjustment program your IBM-PC/AT Type or compatible must meet the following requirements:

- The DOS Operating System must be 3.3 or higher.
- The Operating System must be 100% compatible with your computer.
- The memory in your IBM-PC must be at least 640K-bytes, and 512K-bytes shall be available to the E.V.R. adjustment program.

Installing E.V.R. Adjustment Program

- The Example given here is for A 2 drive computer, your procedure might vary slightly depending on drive configuration.
- Formatting new disk and making a copy of DOS Operating System.

a) Insert disk containing DOS operating system into your floppy drive (for example, drive A) and type **A:**
b) Insert new disk into your floppy drive (for example, drive B).
c) Format and make a copy of DOS operating system from your original disk to new disk by typing **FORMAT B:** / **S** and press the **ENTER** key.
d) Type **COPY ANSI. SYS B:** and press the **ENTER** key.

- Install E.V.R. Adjustment Program onto formatted new disk with DOS operating system.

e) Take out original disk containing DOS operating system from your floppy drive (drive A) and insert disk containing E.V.R. adjustment program into your floppy drive (drive A) and type **A:**
f) At the prompt, type **CD IBMPC** and press the **ENTER** key.
g) If required, type **COPY CONFIG. SYS B**: and press the **ENTER** key.
h) Type **CD PAL** for PAL.
i) Type **COPY ADJ2E. EXE B:** and press the **ENTER** key.
j) Type **CD** \ and press the **ENTER** key.
k) Type **CD SEQ** and press the **ENTER** key.
l) Type **COPY CS600E. SEQ B:** and press the **ENTER** key.
m) Type **CD** \ and press the **ENTER** key.
n) Type **CD EVR** and press the **ENTER** key.
o) Type **COPY CS600E. EVR B:** and press the **ENTER** key.
p) After completing installation of program, you are ready to use the E.V.R. adjustment program.

Note:

When completed the new disk should be a bootable disk which contains the following files:

1. COMMAND COM
2. ANSI SYS
3. CONFIG SYS
4. ADJ2E EXE
5. CS600E SEQ
6. CS600E EVR

ADJUSTMENT PROCEDURE

1. Test Equipment Required

- The following Test Equipments are required for adjustment of the Combination Camera WV-CS600.

- Oscilloscope
- Frequency Counter
- Digital Voltmeter
- Vectorscope
- Waveform Monitor
- Underscanned Colour Video Monitor
- 12 V DC Power Supply Unit
- Lux Meter
- Lighting (275 footcandles (2,750 lx), Colour Temperature 3,200K and 5,100K)
- Personal Computer (IBM PC/AT type or equivalent)
- Standard Straight RS-232C Cable
- White Chart or White Paper
- Manual Iris Lens
- ALC Lens
- Resolution Test Chart
- Colour Temperature Conversion Filters as shown in the Table 1-1.

	Part No.	Description
KODAK	80B	More than 3x3 cm (1 sheet)
FUJI	LBB-12	More than 3x3 cm (1 sheet)
KENKO	C12	More than 20mmø (1 Piece)
HOYA	LB-120	More than 20mmø (1 Piece)
NICON	B12	More than 20mmø (1 Piece)

Table 1-1

- Logarithmic Gray Scale Chart (Part Number: YWV2310RB99) as shown Fig. 1-1.

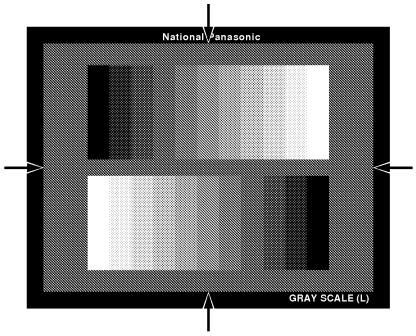


Fig. 1-1

- Colour Chip Chart (Part Number: YWV2100RB98) as shown in Fig. 1-2.

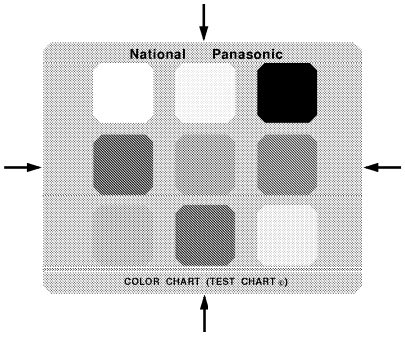


Fig. 1-2

- Electric Variable Resistor (E.V.R.) Adjustment Kit (Part No. : YWV0EA0182AN) as shown in Fig. 1-3.

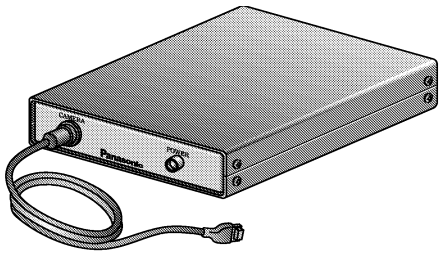
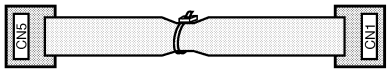
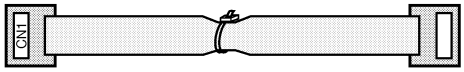


Fig. 1-3

- Extension Board Ass'y (Part Number: YWV0EA1042AN) as shown in the Figures.
  (Following Extension Boards and Extension Cables are included.)
- Extension Cable A for CN5 of the Servo Main Board and CN1 of the Motor Drive Board.

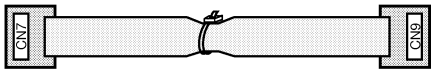


- Extension Cable B for CN1 of the Auto Focus Board and the Lens.

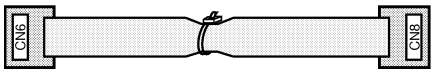


- Extension Cable C for CN1 of the Drive Board and the CN1 of the Sensor Board.

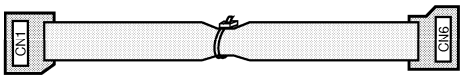
- Extension Cable D for CN7 of the Servo Main Board and CN9 of the Servo Sub Board.



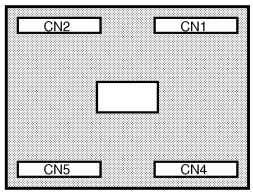
- Extension Cable E for CN6 of the Servo Main Board and CN8 of the Servo Sub Board.



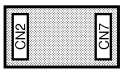
- Extension Cable F for CN1 of the Servo Sub Board and CN6 of the Drive Board.



- Extension Board G for CN1 and CN2 of the Digital Board and CN4 and CN5 of the Drive Board.



- Extension Board H for CN2 of the Auto Focus Board and CN7 of the Drive Board.



2. Disassembling Procedure for Adjustment

- Referring to Fig. 2-1, remove two screws that secure the Dome Cover and turn the Dome Cover to counterclockwise direction, then remove the Dome Cover.

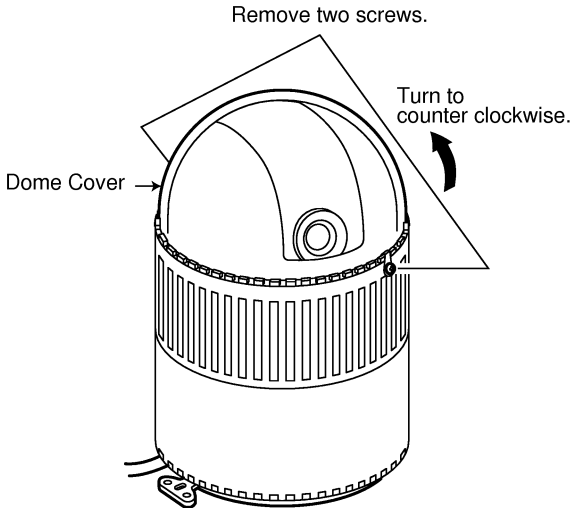


Fig. 2-1

- Referring to Fig. 2-2, remove three Adhesive Tapes and two screws that secure the Black Cover and pull up the Black Cover.
- Remove one screw that secure the Lower Diecast Case, then turn the Lower Diecast Case to the counterclockwise direction and remove the Lower Diecast Case.

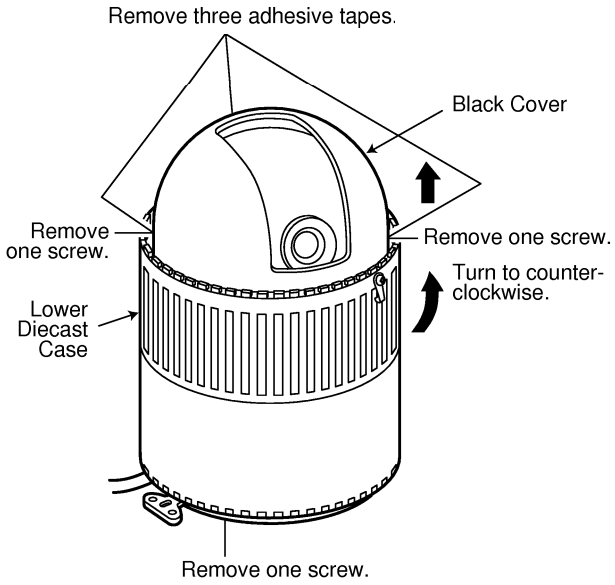


Fig. 2-2

- Referring to Fig. 2-3, disconnect one connector, remove four screws that secure the Lower Diecast Case and remove the Lower Diecast Case.

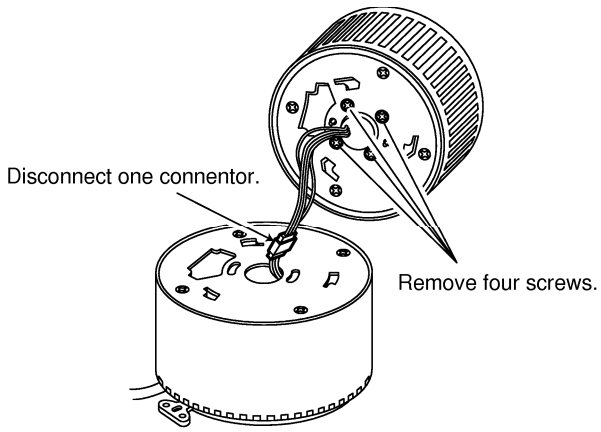


Fig. 2-3

- Referring to Fig. 2-4, remove three screws that secure the Lens Cover and remove the Lens Cover.

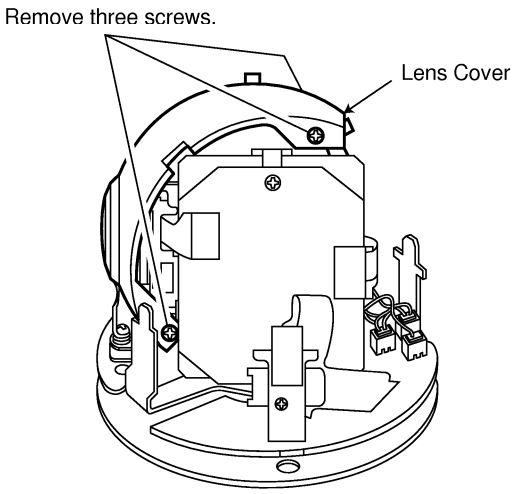


Fig. 2-4

- Referring to Fig. 2-5, remove two screws that secure the Drive Board and Digital Board and remove the Drive Board and Digital Board.

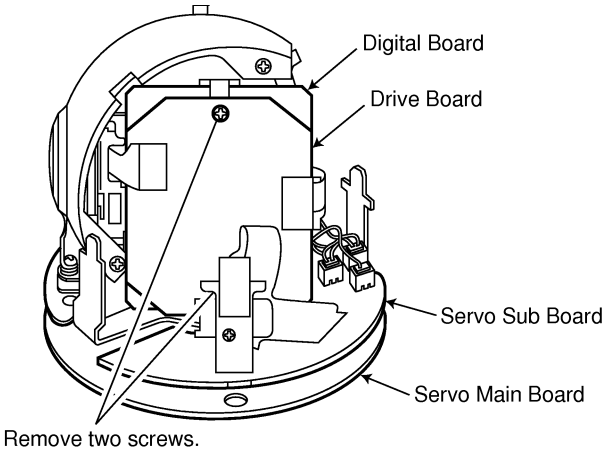


Fig. 2-5

- Referring to Fig. 2-6, remove two screws that secure the Auto Focus Board and remove the Auto Focus Board.

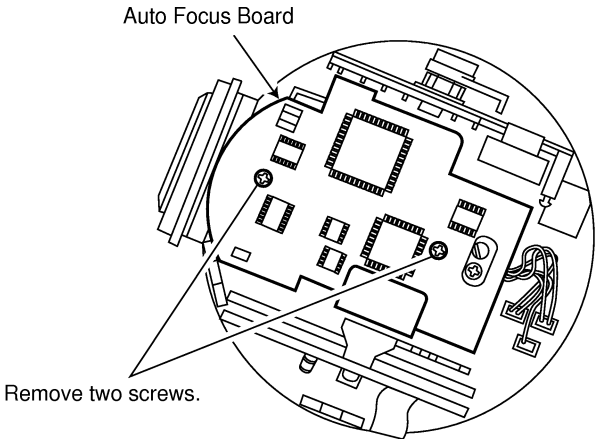


Fig. 2-6

- Referring to Fig. 2-7, remove four screws that secure the Servo Main Board and remove the Servo Main Board.

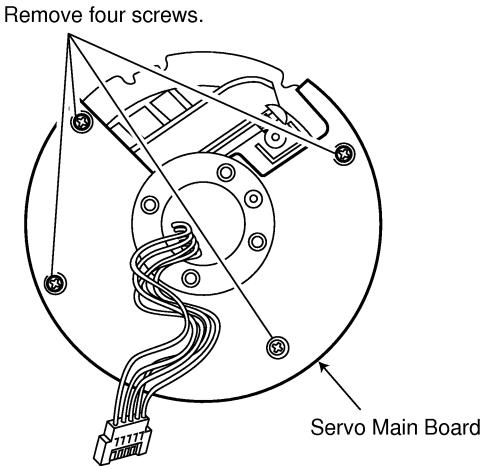


Fig. 2-7

- Referring to Fig. 2-8, remove two screws that secure the Sensor Board and remove the Sensor Board.

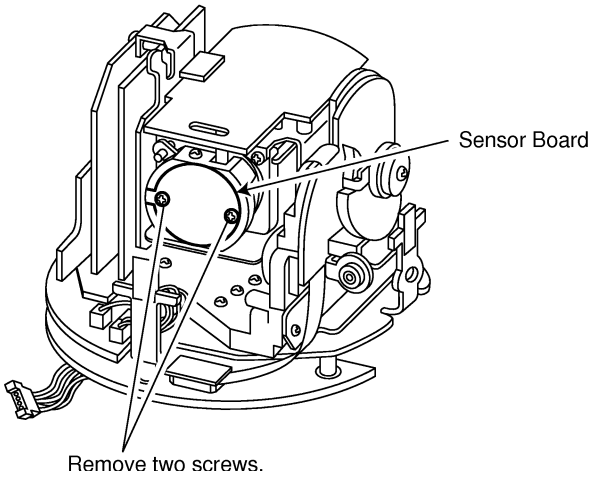


Fig. 2-8

- When adjusting the Camera use eight Extension Boards as shown in Fig. 2-9.

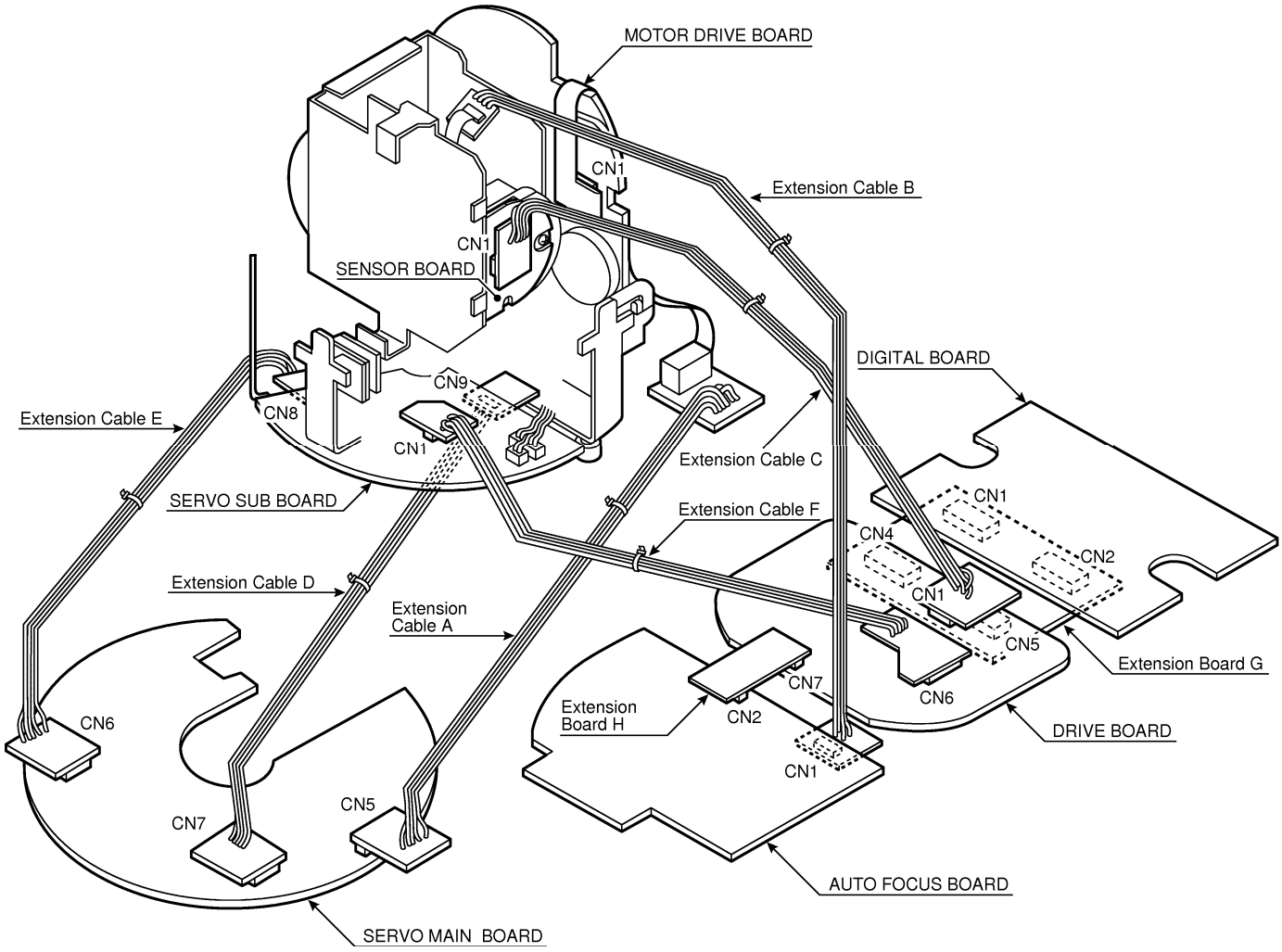


Fig. 2-9

- Connect Extension Cable A between CN5 of the Servo Main Board and CN1 of the Motor Drive Board.
- Connect Extension Cable B between CN1 of the Auto Focus Board and the Lens.
- Connect Extension Cable C between CN1 of the Drive Board and CN1 of the Sensor Board.
- Connect Extension Cable D between CN7 of the Servo Main Board and CN9 of the Servo Sub Board.
- Connect Extension Cable E between CN6 of the Servo Main Board and CN8 of the Servo Sub Board.
- Connect Extension Cable F between CN1 of the Servo Sub Board and CN6 of the Drive Board.
- Connect Extension Board H between CN1 and CN2 of the Digital Board and CN4 and CN5 of the Drive Board.
- Connect Extension Board G between CN2 of the Auto Focus Board and CN7 of the Drive Board.
- After wiring, tern the Tilt Gear so that the Lens becomes right-angle by hand.
- Turn on the Power Switch.
- Contact the magnet to VS17 on the Servo Main Board.

3. Connection and Setting Up for Adjustment

3.1. Connection

- The Fig. 3-1 shows the connection diagram for the adjustment procedure.

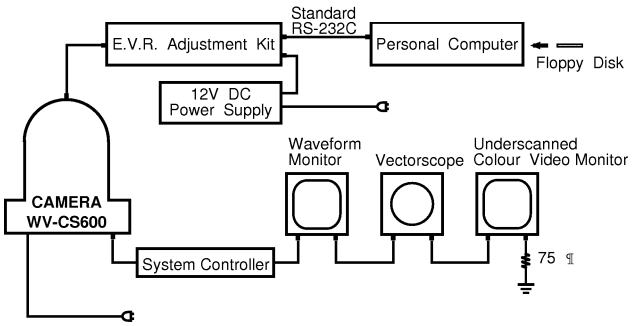


Fig. 3-1

- Connect the Underscanned Colour Video Monitor to the Video Output Connector of the System Controller through the Waveform Monitor and the Vectorscope using the coaxial cables.
- Connect the Video Output Cable of the WV-CS600 to the CAMERA INPUT Connector of the System Controller.
- Terminate the input terminal of the Underscanned Colour Video Monitor with 75 Ω.
- Connect extension cable of the E.V.R. Adjustment Kit to CN3 on the Drive Board of the WV-CS600.
- Connect the 12 V DC Power Supply Unit to the E.V.R. Adjustment Kit.
- Connect the E.V.R. Adjustment Kit to IBM PC/AT type using the Standard Straight RS-232C cable.
- Connect the probe of the Digital Voltmeter, Oscilloscope or Frequency Counter at the desired Test Point in each adjustment step.

3.2. Setting Up for Standard Picture

- The adjustment should be done after 10 minutes warm-up.
- Set the Logarithmic Gray Scale Chart.
- Incident light of 2,750 ± 50 lx on the Logarithmic Gray Scale Chart.
- Aim the Camera at the Logarithmic Gray Scale Chart.
- Set the Camera so that the Logarithmic Gray Scale Chart becomes full picture on the Underscanned Colour Video Monitor by the System Controller.
- Connect the Oscilloscope to pin 1 (CDS OUT) of CN2 on the Drive Board.
- Adjust the Lens Focus to obtain correct focal point by the System Controller.
- Set the Lens Iris so that the peak level of the Gray Scale from the Blanking level becomes 300 mV as shown in Fig. 3-2.

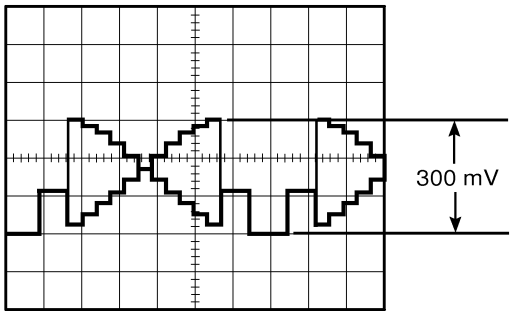


Fig. 3-2

- The adjustments should be done with this Standard Picture, unless otherwise specified.

4. Adjustment Procedure

- Refer to the Location of the Test Points and Adjusting Controls on the page 61.

■ Adjustment Procedure-1

(1) VSUB Adjustment

Test Point: **TD3 (VSUB)** **Sensor Board**

Adjust: **VR2 (VSUB)** **Sensor Board**

- Check the Rank letter on the Sensor Board as shown in Fig. 4-1.

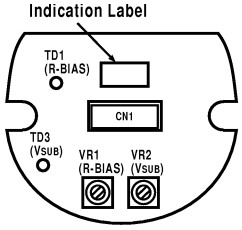


Fig. 4-1

- Mount F1.4 Manual Iris Lens.
- Open the Lens Iris fully.
- Connect the Digital Voltmeter to the TD3.
- Adjust VR2 to obtain indicated voltage ± 0.03 V on the Sensor Board as shown in Table 4-1.

Rank	E	f	G	h	J	K	L	m	N	P
Voltage	9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5
Rank	Q	R	S	T	U	V	W	X	Y	Z
Voltage	14.0	14.5	15.0	15.5	16.0	16.5	17.0	17.5	18.0	18.5

Table 4-1

(2) Reset Bias Adjustment

Test Point: TD1 (R-BIAS) Sensor Board
Adjust: VR1 (R-BIAS) Sensor Board

- Check the Rank letter on the Sensor Board as shown in Fig. 4-1.
- Connect the Digital Voltmeter to the TD1.
- Adjust VR1 so that the bottom level of the Reset Noise becomes indicated voltage ± 0.03 V on the Sensor Board as shown in Table 4-2.

Rank	1	2	3	4	5	6	7
Voltage	1.0	1.5	2.0	2.5	3.0	3.5	4.0

Table 4-2

(3) Drive VCO Adjustment

Test Point: TP1 (DRIVE VCO) Drive Board
Adjust: L1 (DRIVE VCO) Drive Board

- Connect the Digital Voltmeter to TP1.
- Adjust L1 to obtain 1.7 ± 0.2 V DC.

(4) Back Focus Adjustment

Test Point: Video Output Connector
Adjust: Back Focus Adjustment Screw

- Referring to Fig. 4-2, loosen the Back Focus Locking Screw.
- Aim the Camera at the Resolution Test Chart further than 1.3 meters.
- Zoom out and adjust the Focus by the System Controller.
- Adjust the Back Focus Adjusting Screw by the flat head screwdriver for best focal point as shown in Fig. 4-2.
- Zoom in the Lens by the System Controller.
- Adjust best focal point by the System Controller.
- Repeat adjust between the WIDE mode and TELE mode to obtain best focal point.
- Tighten the Back Focus Locking Screw.
- Aim the Camera at the Resolution Test Chart further than 15 meters.
- Confirm that the focal point should be obtained by Focus Control of the System Controller.
- Aim the Camera at the Resolution Test Chart further than 1.2 meters.
- Confirm that the focal point should be obtained by Focus Control of the System Controller.

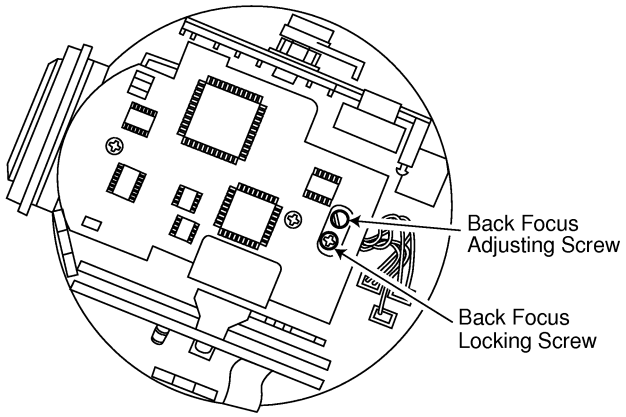


Fig. 4-2

■ Adjustment Procedure-2 (E.V.R. Adjustment)

- Connect extension cable of the E.V.R. Adjustment Kit to CN3 on the Drive Board.
- Connect the E.V.R. Adjustment Kit to IBM PC/AT type using the Standard Straight RS-232C cable.
- Insert new disk containing DOS Operating System and the E.V.R. Adjustment program into IBM PC/AT and turns on the Power Switch of IBM PC/AT.
- At the prompt, type **ADJ2E CS600E** and press the **ENTER** key an initial menu page (1/2) as shown in Table 4-3-1 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. CCTV PRODUCT: CS600 EEPROM: 0
********** MENU ***** Page (1/2) ****** PAL

 1. SC Frequency                    4.5.(A).(3). BLC LEVEL CHECK
 3. LL PHASE                        4.5.(A).(6). D-RANGE ALC LEVEL CHECK
 4.1. HI CLIP LEVEL                 4.5.(A).(7). D-RANGE BLC LEVEL CHECK
 4.2.(A). OB                        4.5.(B). PEDESTAL CHECK
 4.2.(B). PEDESTAL                  4.5.(C). KNEE LEVEL CHECK
 4.2.(C). LOW CLIP                  4.5.(2). LOW LIGHT LEVEL CHECK
 4.3.(I1). Y GAIN INITIALIZE 1      5.2.(1). MANUAL IRIS 1
 4.3.(I2). Y GAIN INITIALIZE 2      5.2.(2). MANUAL IRIS 2
 4.3.(A). AGC OFF GAIN              6.1.(A).1. BURST LEVEL, PHASE
 4.3.(B). AD/IN GAIN                6.1.(A).2. BURST LEVEL, PHASE
 4.3.(C). VIDEO OUT GAIN            6.1.(B). CHROMA PHASE
 4.3.(D). AD/IN GAIN (D-RANGE)      6.2.(A).1. WB 3200K MANU OFFSET R
 4.3.(E). D-RANGE VIDEO OUT GAIN    6.2.(A).2. WB 3200K MANU OFFSET B
 4.4.(A). ALC DC                    6.2.(B).1. WB 5100K ATW LIMIT R
 4.4.(B). ALC LEVEL                 6.2.(B).2. WB 5100K ATW LIMIT B
 4.4.(C). BLC LEVEL                 6.3.(A).1. 3200K R_GAIN
 4.4.(D). D-RANGE ALC LEVEL         6.3.(B). 3200K B_GAIN
 4.4.(E). D-RANGE BLC LEVEL         6.3.(C). 3200K R_MATRIX
 4.5.(1). ALC LEVEL CHECK           6.4.(A). 5100K R_GAIN
 4.5.(2). AGC LEVEL CHECK           6.4.(B). 5100K B_GAIN

<CONTENTS>   TP7 (SC) [SYNC]     4433619+-10Hz
<INSTRUCTION> PLEASE CHOOSE MENU DATA BY ARROW-DATA
  LOAD(F1)     QUIT(F3)     SAVE(F5)
```

Table 4-3-1

- Press the **PAGE UP** key, an initial menu page (2/2) for adjustment as shown in Table 4-3-2 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. CCTV PRODUCT: CS600 EEPROM: 0
********** MENU ***** Page (2/2) ******* PAL
  6.5. HIGHLIGHT CHROMA CLIP




<CONTENTS>    VIDEO OUT
<INSTRUCTION> PLEASE CHOOSE MENU DATA BY ARROW-DATA
   LOAD(F1)       QUIT(F3)       SAVE(F5)
```

Table 4-3-2

- Press the **SAVE (F5)** key of the Computer, then the Computer will ask you for the file name.
- Give appropriate file name to the Computer. But do not use **CS600E.EVR** for your file.
- This saving procedure is recommended to keep the current adjustment status of the Camera.
- Press the **LOAD (F1)** key and type **CS600E.EVR** and press the **ENTER** key for presetting adjustment of the Camera.
- Press the **ENTER** key to start of adjustment.

Notes:

- **EEPROM**s mentioned in this adjustment procedure are IC4 and IC27 on the Digital Board.
- **RAM** mentioned in this adjustment procedure is internal RAM of IC8 on the Digital Board.
- **C.DSP** mentioned in this adjustment procedure is IC3 on the Digital Board.

(1).1. Subcarrier Frequency Adjustment

Test Point: **TP2 (SC VCXO)** **Digital Board**
Adjust: **RAM (202)** **Digital Board**

- The menu as shown in Table 4-4 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. CCTV PRODUCT: CS600 EEPROM: 0
********** EVR ********** PAL

 1. SC FREQUENCY
    TP2 (SC VCXO) [DIGITAL] 4433619 + – 10Hz

   ********************************************
<DEVICE>      : RAM2
<ADDRESS>     : 202
<DATA>        : 5F – 5F

<MESSAGE>     :

<INSTRUCTION> ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)       SAVE(F5)
```

Table 4-4

- Connect the Frequency Counter to TP2.
- Adjust data with the **ARROW** keys so that the Subcarrier Frequency becomes 4.433619 MHz ± 10 Hz.
- Press the **ENTER** key for next adjustment.

(2).3. Line Lock Phase Adjustment

Test Point: **Video Output Connector**
AC Live Waveform
Adjust: **RAM (0B4)** **Digital Board**

- The menu as shown in Table 4-5 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. CCTV PRODUCT: CS600 EEPROM: 0
********** EVR ********** PAL

 3. LL PHASE
    VIDEO OUT  2H + – 4H

   ********************************************
<DEVICE>      : RAM0
<ADDRESS>     : 0B4
<DATA>        : 37 – 37

<MESSAGE>     :

<INSTRUCTION> ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)       SAVE(F5)
```

Table 4-5

- Connect the CH1 of the Oscilloscope to Video Output Connector.
- Connect the CH2 of the Oscilloscope to the AC Power Line.
- Trigger the Oscilloscope at the V-rate.
- Adjust data with the **ARROW** keys so that the Line Lock Phase becomes 2 H ± 4 H as shown in Fig. 4-3.

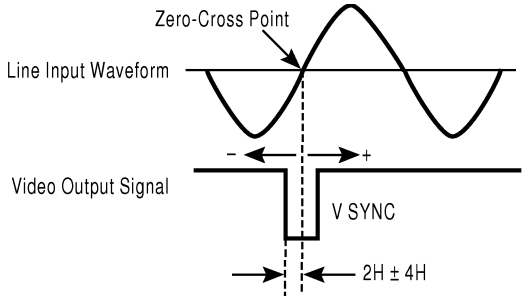


Fig. 4-3

- Press the **ENTER** key for next adjustment.

(3).4.1. High Clip Level Adjustment

Test Point: Video Output Connector

Adjust: RAM (200) Digital Board

- The menu as shown in Table 4-6 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************** EVR ******************** PAL

 4.1. HIGH CLIP
    VIDEO OUT  805 +30 –0 mV

   ********************************************
<DEVICE>     : RAM2
<ADDRESS>    : 200
<DATA>       : 51 — 51
               :
<MESSAGE>    :

<INSTRUCTION> ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 4-6

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Open the Lens Iris fully.
- Connect the terminated Oscilloscope with 75Ω to the Video Output Connector.
- Adjust data with the **ARROW** keys so that the High Clip Level becomes 805 $^{+30}_{-0}$ mV as shown in Fig. 4-4.

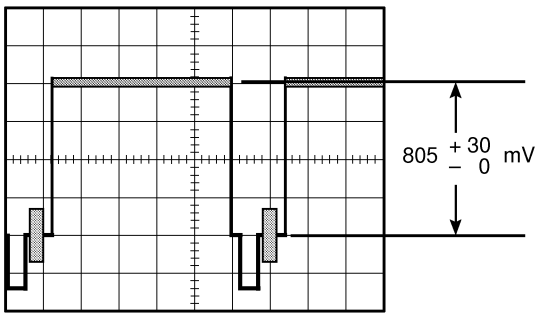


Fig. 4-4

- Press the **ENTER** key for next adjustment.

(4).4.2.(A). OB Adjustment

Test Point: RAM (12C) Digital Board

Adjust: RAM (123) Digital Board

- The menu as shown in Table 4-7 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************** EVR ******************** PAL

 4.2.(A). OB
    LENS CLOSE,  MEASURE  01

   ********************************************
<DEVICE>     : RAM1
<ADDRESS>    : 123
<DATA>       : 23 — 23
<MEASURE>    : 01
<MESSAGE>    :

<INSTRUCTION> ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 4-7

- Cap on the Lens.
- Adjust data with the **ARROW** keys so that the measure data becomes 01.
- Press the **ENTER** key for next adjustment.

(5).4.2.(B). Pedestal Adjustment

Test Point: Video Output Connector

Adjust: RAM (0B2) Digital Board

- The menu as shown in Table 4-8 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************** EVR ******************** PAL

 4.2.(B). PEDESTAL
    LENS CLOSE,  VIDEO OUT  50 + – 5mV

   ********************************************
<DEVICE>     : RAM0
<ADDRESS>    : 0B2
<DATA>       : 0F — 0F

<MESSAGE>    :

<INSTRUCTION>     ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 4-8

- Cap on the Lens.
- Connect the terminated Oscilloscope with 75Ω to the Video Output Connector.
- Adjust data with the **ARROW** keys so that the Pedestal level becomes 50 ± 5 mV as shown in Fig. 4-5.

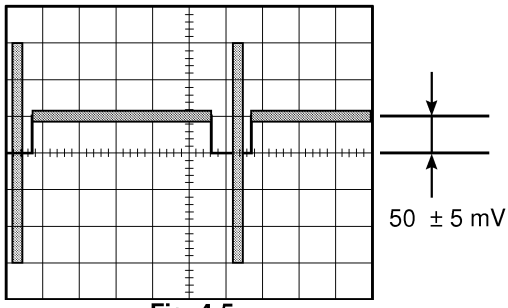


Fig. 4-5

- Press the **ENTER** key for next adjustment.

(6).4.2.(C). Low Clip Adjustment

Test Point: Video Output Connector

Adjust: RAM (203) Digital Board

- The menu as shown in Table 4-9 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************* EVR ******************** PAL

 4.2.(C). LOW CLIP
   LENS CLOSE,  VIDEO OUT  50 + – 5 mV

   ******************************************
<DEVICE>     : RAM2
<ADDRESS>    : 203
<DATA>       : 04 — 04

<MESSAGE>    :

<INSTRUCTION> ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)       QUIT(F3)       SAVE(F5)
```

Table 4-9

- Cap on the Lens.
- Connect the terminated Oscilloscope with 75Ω to the Video Output Connector.
- Adjust data with the **ARROW** keys so that the Pedestal level becomes 50 ± 5 mV as shown in Fig. 4-6.

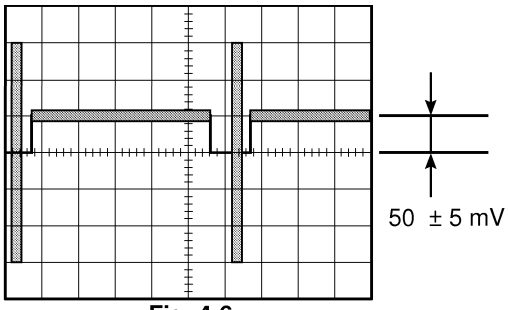


Fig. 4-6

- Press the **PAGE DOWN** key twice to return to (4).4.2.(A). OB Adjustment, and repeat adjustment steps (4).4.2.(A). and (6).4.2.(C). until both data become satisfactory.
- Press the **ENTER** key for next adjustment.

(7).4.3.(I1). Y Gain Initialize 1 Adjustment

Test Point: **Pin 1 of CN2 (CDSOUT)** **Drive Board**
Adjust: **Lens Iris for Manual Lens**
RAM (20C) for ALC Lens **Digital Board**

- The menu as shown in Table 4-10 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************* EVR ******************** PAL

 4.3.(I1). Y GAIN INITIALIZE 1
   CN2-1 (CDSOUT)  300 + – 30 mV, WITH ND8

   ******************************************
<DEVICE>     : RAM2
<ADDRESS>    : 20C
<DATA>       : 05 — 05

<MESSAGE>    :

<INSTRUCTION> ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)       QUIT(F3)       SAVE(F5)
```

Table 4-10

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Mount the ND8 Filter on the Lens.
- Connect the Oscilloscope to the pin 1 of CN2.
- Set the Lens Iris so that the CDS OUT signal level at the pin 1 of CN2 becomes 300 mV as shown in Fig. 4-7 (for the Manual Lens).
- Adjust data with the **ARROW** keys so that the CDS OUT signal level becomes 300 mV as shown in Fig. 4-7 (for ALC Lens).

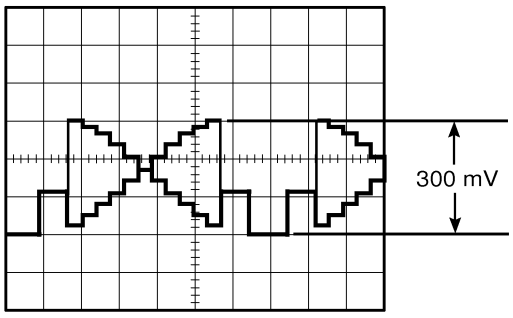


Fig. 4-7

- Press the **ENTER** key for next adjustment.

(8).4.3.(I2). Y Gain Initialize 2 Adjustment

Test Point: **Pin 1 of CN2 (CDSOUT)** **Drive Board**
Adjust: **Lens Iris for Manual Lens**
RAM (20B) for ALC Lens **Digital Board**

- The menu as shown in Table 4-11 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************* EVR ******************** PAL

 4.3.(I1). Y GAIN INITIALIZE 2
   CN2-1 (CDSOUT)  300 + – 30 mV, WITH ND8

   ******************************************
<DEVICE>     : RAM2
<ADDRESS>    : 20C
<DATA>       : 80 — 80

<MESSAGE>    :

<INSTRUCTION> ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)       QUIT(F3)       SAVE(F5)
```

Table 4-11

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Mount the ND8 Filter on the Lens.
- Connect the Oscilloscope to the pin 1 of CN2.
- Set the Lens Iris so that the CDS OUT signal level at the pin 1 of CN2 becomes 300 mV as shown in Fig. 4-8 (for the Manual Lens).
- Adjust data with the **ARROW** keys so that the CDS OUT signal level becomes 300 mV as shown in Fig. 4-8 (for ALC Lens).

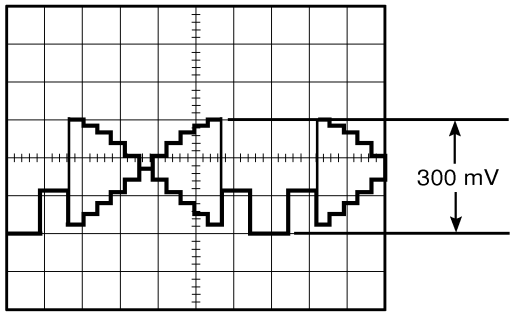


Fig. 4-8

- Press the **ENTER** key for next adjustment.

(9).4.3.(A). AGC Off Gain Adjustment

Test Point: **Pin 3 of CN2 (AGCOUT)** **Drive Board**

Adjust: **RAM (117)** **Digital Board**

- The menu as shown in Table 4-12 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************* EVR ******************** PAL

 4.3.(A). AGC OFF GAIN
   CN2-3 (AGCOUT)  [DRIVE]  300 + – 30 mV; CN2-1(CDSOUT) 300mV,
   USE MANUAL LENS

  ********************************************
<DEVICE>     : RAM1
<ADDRESS>    : 117
<DATA>       : 1A — 1A

<MESSAGE>    :

<INSTRUCTION> ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)       QUIT(F3)       SAVE(F5)
```

Table 4-12

Aim the Camera at the Logarithmic Gray Scale Chart.

- Connect the Oscilloscope to the pin 3 of CN2.
- Adjust data with the **ARROW** keys so that the AGC OUT signal level becomes 300 mV as shown in Fig. 4-9.

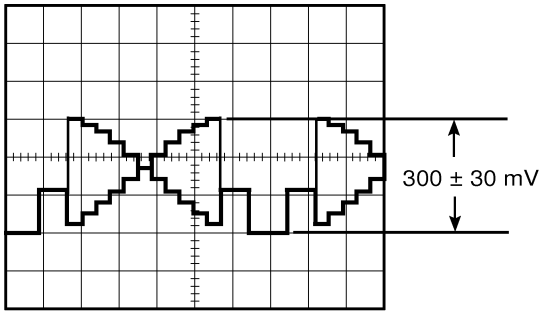


Fig. 4-9

- Press the **ENTER** key for next adjustment.

(10).4.3.(B). AD/IN Gain Adjustment

Test Point: **Pin 5 of CN2 (AD/IN)** **Drive Board**

RAM (12C) **Digital Board**

Adjust: **RAM (206)** **Digital Board**

- The menu as shown in Table 4-13 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************* EVR ******************** PAL

 4.3.(B). AD/IN GAIN
   CN2-5 (AD/IN)  [DRIVE]  800 + – 30 mV : CN2-1(CCDSOUT) 300mV
   USE MANUAL LENS

  ********************************************
<DEVICE>     : RAM2
<ADDRESS>    : 206
<DATA>       : 84 — 84
<MUASURE>    : 11
<MESSAGE>    :

<INSTRUCTION> ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)       QUIT(F3)       SAVE(F5)
```

Table 4-13

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the Oscilloscope to the pin 5 of CN2.
- Adjust data with the **ARROW** keys so that the AD/IN signal level becomes 800 ± 30 mV as shown in Fig. 4-10.

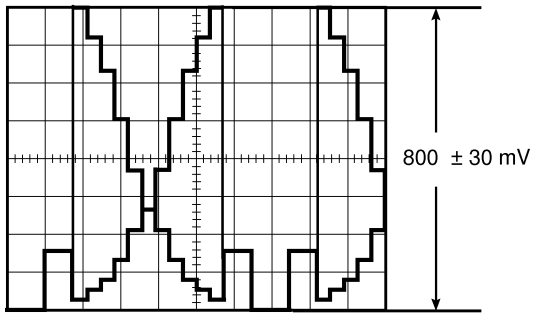


Fig. 4-10

- Press the **ENTER** key for next adjustment.

(11).4.3.(C). Video Out Gain Adjustment

Test Point: **Video Output Connector**

Adjust: **RAM (0A2)** **Digital Board**

- The menu as shown in Table 4-14 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************* EVR ******************** PAL

 4.3.(C). VIDEO OUT GAIN
   VIDEO OUT  700 + – 50 mV :  CN2-1(CDSOUT) 300mV,  USE MANUAL LENS

  ********************************************
<DEVICE>     : RAM0
<ADDRESS>    : 0A2
<DATA>       : 21 — 21
               :
<MESSAGE>    :

<INSTRUCTION> ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)       QUIT(F3)       SAVE(F5)
```

Table 4-14

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the terminated Oscilloscope with 75Ω to the Video Output Connector.
- Adjust data with the **ARROW** keys so that the Video Output signal level becomes 700 ± 50 mV as shown in Fig. 4-11.

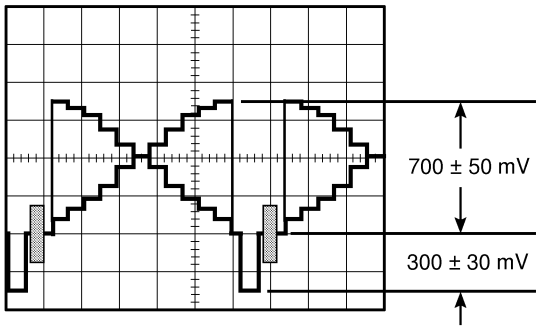


Fig. 4-11

- Press the **ENTER** key for next adjustment.

(12).4.3.(D). AD/IN Gain (D-Range) Adjustment

Test Point:	**Pin 1 of CN2 (CDSOUT)**	**Drive Board**
	Pin 5 of CN2 (AD/IN)	**Drive Board**
Adjust:	**RAM (20F)**	**Digital Board**

- The menu as shown in Table 4-15 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************* EVR ******************** PAL

 4.3.(D). AD/IN GAIN (D-RANGE)
   CN2-5 (AD/IN)  [DRIVE]   800 + – 30 mV :  CN2-1(CDSOUT)  200mV,
   USE MANUAL LENS
   ********************************************
<DEVICE>      : RAM2
<ADDRESS>     : 20F
<DATA>        : 5B — 5B

<MESSAGE>     :

<INSTRUCTION>     ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 4-15

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the Oscilloscope to the pin 1 of CN2.
- Set the Lens Iris so that the CDS OUT signal level at the pin 1 of CN2 becomes 200 mV as shown in Fig. 4-12.

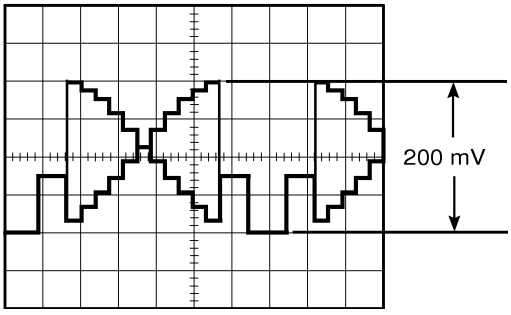


Fig. 4-12

- Change the connection of the Oscilloscope to the pin 5 of CN2.
- Adjust data with the **ARROW** keys so that the AD/IN signal level becomes 800 ± 30 mV as shown in Fig. 4-13.

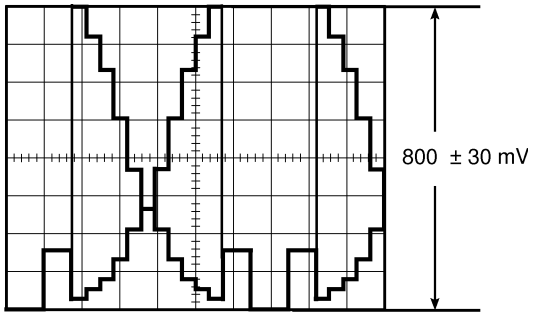


Fig. 4-13

- Press the **ENTER** key for next adjustment.

(13).4.3.(E). D-Range Video Out Gain Adjustment

Test Point:	**Video Output Connector**	
	Pin 1 of CN2 (CDSOUT)	**Drive Board**
Adjust:	**RAM (0BF)**	**Digital Board**
	RAM (0BE)	**Digital Board**

- The menu as shown in Table 4-16 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************* EVR ******************** PAL

 4.3.(E). D-RANGE VIDEO OUT GAIN
   VIDEO OUT  700 + – 50 mV  :  CN2-1(CDSOUT)  200mV,  USE MANUAL LENS

   ********************************************
<DEVICE>      : RAM0
<ADDRESS>     : 0BF : 0BE
<DATA>        : 00 E2 — 00 E2

<MESSAGE>     :

<INSTRUCTION> ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 4-16

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Set the Lens Iris so that the CDS OUT signal level at the pin 1 of CN2 becomes 200 mV as shown in Fig. 4-14.

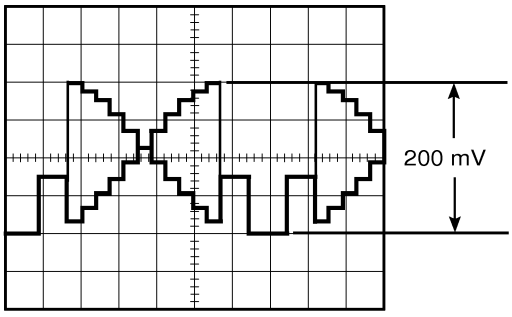


Fig. 4-14

- Connect the terminated Oscilloscope with 75Ω to the Video Output Connector.
- Adjust data with the **ARROW** keys so that the Video Output signal level becomes 700 ± 50 mV as shown in Fig. 4-15.

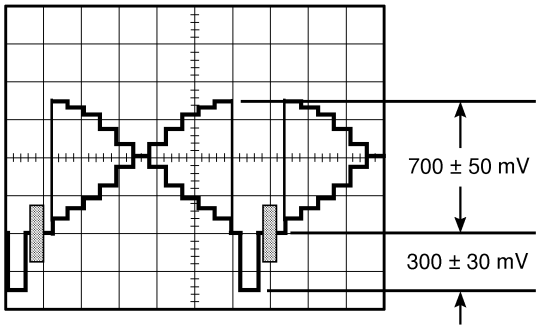


Fig. 4-15

- Press the **ENTER** key for next adjustment.

(14).4.4.(A). ALC DC Adjustment

Test Point: **RAM (112)** **Drive Board**
Pin 1 of CN2 (CDSOUT) **Drive Board**
Adjust: **RAM (119)** **Digital Board**

- The menu as shown in Table 4-17 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************* EVR ******************** PAL

 4.4.(A). ALC DC
   00 < MEASURE < 05  : USE ALC LENS

   ******************************************
<DEVICE>     : RAM1
<ADDRESS>    : 119
<DATA>       : 7E — 7E
<MEASURE>    : 00
<MESSAGE>    :

<INSTRUCTION> ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)       QUIT(F3)       SAVE(F5)
```

Table 4-17

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the Oscilloscope to the pin 1 of CN2.
- Set the Lens Iris so that the CDS OUT signal level at the pin 1 of CN2 becomes 300 mV as shown in Fig. 4-17.

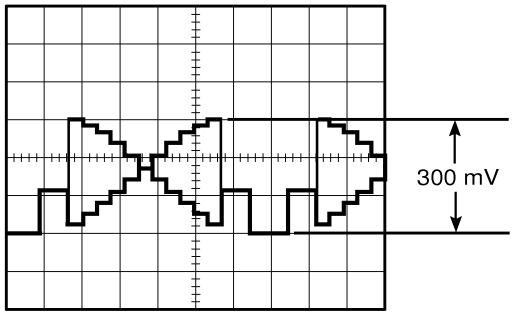


Fig. 4-16

- Adjust data with the **ARROW** keys so that the measured Data becomes between 00 and 05.

(15).4.4.(B). ALC Level Adjustment

Test Point: **Video Output Connector**
Adjust: **RAM (11D)** **Digital Board**

- The menu as shown in Table 4-18 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************* EVR ******************** PAL

 4.4.(B). ALC LEVEL
   VIDEO OUT  700 + – 50 mV

   ******************************************
<DEVICE>     : RAM1
<ADDRESS>    : 11D
<DATA>       : 6F — 6F

<MESSAGE>    :

<INSTRUCTION> ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)       QUIT(F3)       SAVE(F5)
```

Table 4-18

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the terminated Oscilloscope with 75Ω to the Video Output Connector.
- Adjust data with the **ARROW** keys so that the Video Output signal level becomes 700 ± 50 mV as shown in Fig. 4-17.

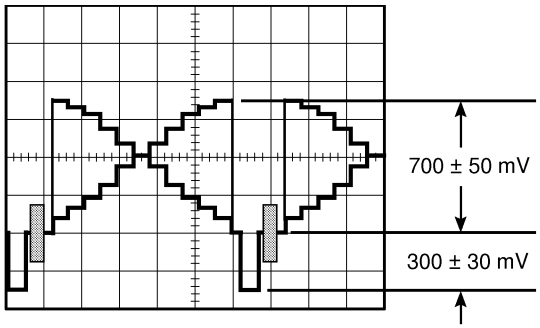


Fig. 4-17

- Press the **ENTER** key for next adjustment.

(16).4.4.(C). BLC Level Adjustment

Test Point: **Video Output Connector**
Adjust: **RAM (11C)** **Digital Board**

- The menu as shown in Table 4-19 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************* EVR ******************** PAL

 4.4.(C). BLC LEVEL
   VIDEO OUT  700 + – 50 mV

   ******************************************
<DEVICE>     : RAM1
<ADDRESS>    : 11C
<DATA>       : 24 — 24
               :
<MESSAGE>    :

<INSTRUCTION> ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)       QUIT(F3)       SAVE(F5)
```

Table 4-19

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the terminated Oscilloscope with 75Ω to the Video Output Connector.

- Adjust data with the **ARROW** keys so that the Video Output signal level becomes 700 ± 50 mV as shown in Fig. 4-18.

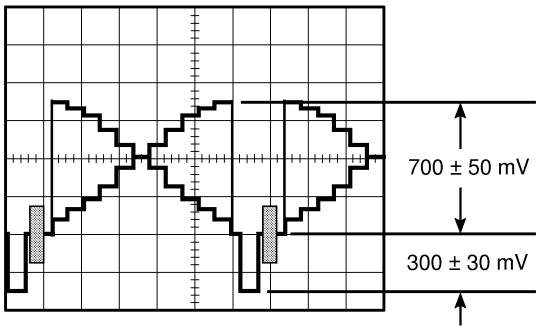


Fig. 4-18

- Press the **ENTER** key for next adjustment.

(17).4.4.(D). D-Range ALC Level Adjustment

Test Point: **Pin 1 of CN2 (CDSOUT)** **Drive Board**
Adjust: **RAM (11F)** **Digital Board**

- The menu as shown in Table 4-20 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************* EVR ******************** PAL

 4.4.(D). D-RANGE ALC LEVEL
   CN2-1 (CDSOUT)  200 + – 30 mV

  ********************************************
<DEVICE>     : RAM1
<ADDRESS>    : 11F
<DATA>       : 34 — 34
               :
<MESSAGE>    :

<INSTRUCTION> ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 4-20

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the Oscilloscope to the pin 1 of CN2.
- Adjust data with the **ARROW** keys so that the Video Output signal level becomes 200 ± 30 mV as shown in Fig. 4-19.

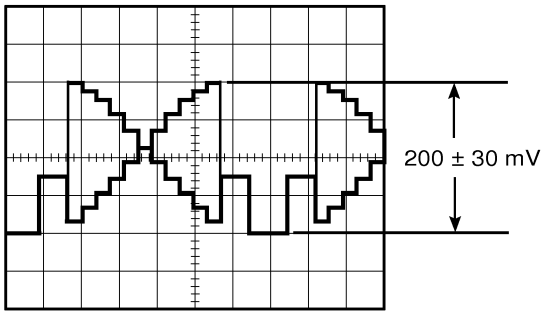


Fig. 4-19

- Press the **ENTER** key for next adjustment.

(18).4.4.(E). D-Range BLC Level Adjustment

Test Point: **Pin 1 of CN2 (CDSOUT)** **Drive Board**
Adjust: **RAM (11E)** **Digital Board**

- The menu as shown in Table 4-21 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************* EVR ******************** PAL

 4.4.(E). D-RANGE BLC LEVEL
   CN2-1 (CDSOUT)  200 + – 30 mV

  ********************************************
<DEVICE>     : RAM1
<ADDRESS>    : 11E
<DATA>       : 1A — 1A

<MESSAGE>    :

<INSTRUCTION>     ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 4-21

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the Oscilloscope to the pin 1 of CN2.
- Adjust data with the **ARROW** keys so that the Video Output signal level becomes 200 ± 30 mV as shown in Fig. 4-20.

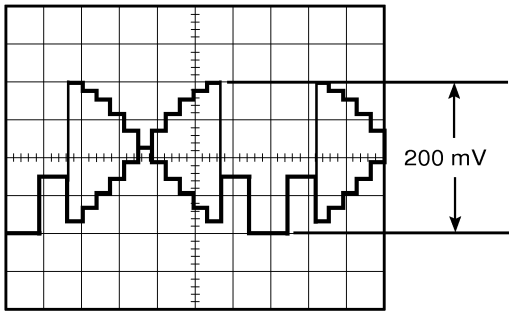


Fig. 4-20

- Press the **ENTER** key for next adjustment.

(19).4.5.(1). ALC Level Confirmation

Test Point: **Video Output Connector**

- The menu as shown in Table 4-22 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************* EVR ******************** PAL

 4.5.(1). ALC LEVEL CHECK
   VIDEO OUT  700 + – 50 mV

  ********************************************
<DEVICE>     : RAM1
<ADDRESS>    : 11D
<DATA>       : 24 — 24
               :
<MESSAGE>    :

<INSTRUCTION> ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 4-22

- Aim the Camera at the Logarithmic Gray Scale Chart.

- Connect the terminated Oscilloscope with 75Ω to the Video Output Connector.
- Confirm that the Video Output signal level becomes 700 ± 50 mV as shown in Fig. 4-21.

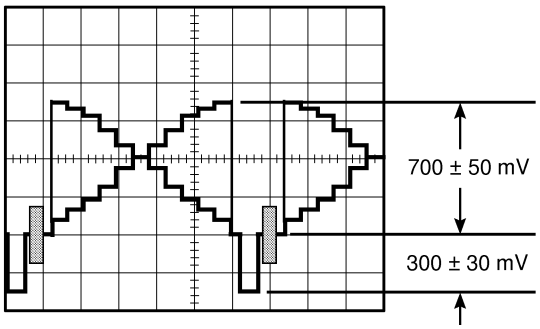


Fig. 4-21

- Press the **ENTER** key for next adjustment.

(20).4.5.(2). AGC Level Confirmation

Test Point: Video Output Connector

- The menu as shown in Table 4-23 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************* EVR ******************** PAL

 4.5.(2). AGC LEVEL CHECK
    VIDEO OUT   700 + – 50 mV

   ******************************************
<DEVICE>      : RAM1
<ADDRESS>     : 11E
<DATA>        : 5B — 5B

<MESSAGE>     :

<INSTRUCTION>     ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 4-23

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the terminated Oscilloscope with 75Ω to the Video Output Connector.
- Confirm that the Video Output signal level becomes 700 ± 50 mV as shown in Fig. 4-22.

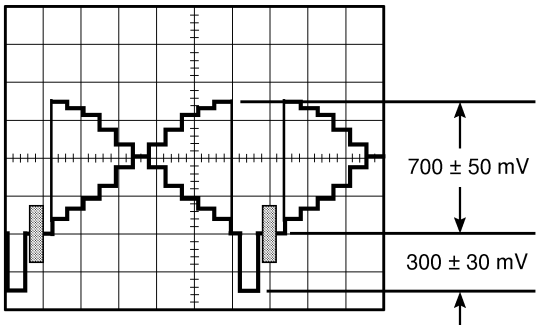


Fig. 4-22

- Press the **ENTER** key for next adjustment.

(21).4.5.(A).(3). BLC Level Confirmation

Test Point: Video Output Connector

- The menu as shown in Table 4-24 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************* EVR ******************** PAL

 4.5.(A).3. BLC LEVEL CHECK
    VIDEO OUT  700 + – 50 mV

   ******************************************
<DEVICE>      : RAM1
<ADDRESS>     : 11C
<DATA>        : 24 — 24

<MESSAGE>     :

<INSTRUCTION> ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 4-24

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the terminated Oscilloscope with 75Ω to the Video Output Connector.
- Confirm that the Video Output signal level becomes 700 ± 50 mV as shown in Fig. 4-23.

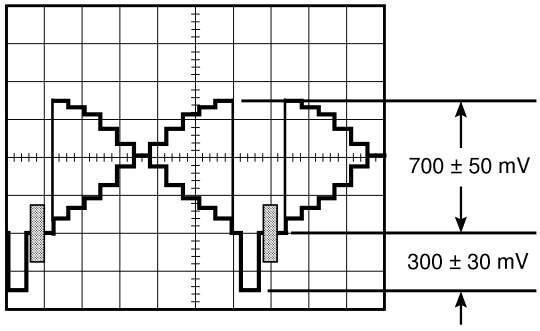


Fig. 4-23

- Press the **ENTER** key for next adjustment.

(22).4.5.(A).(6). D-Range ALC Level Confirmation

Test Point: Video Output Connector

- The menu as shown in Table 4-25 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************* EVR ******************** PAL

 4.5.(A).(6). D-RANGE ALC LEVEL
    VIDEO OUT  700 + – 50 mV

   ******************************************
<DEVICE>      : RAM1
<ADDRESS>     : 11F
<DATA>        : 1A — 1A
                :
<MESSAGE>     :

<INSTRUCTION> ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 4-25

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the terminated Oscilloscope with 75Ω to the Video Output Connector.

- Confirm that the Video Output signal level becomes 700 ± 50 mV as shown in Fig. 4-24.

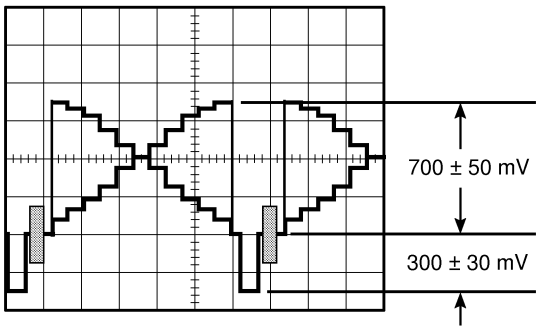


Fig. 4-24

- Press the **ENTER** key for next adjustment.

(23).4.5.(A).(7). D-Range BLC Level Confirmation

Test Point: Video Output Connector

- The menu as shown in Table 4-26 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************** EVR ******************** PAL

 4.5.(A).(7). D-RANGE BLC LEVEL CHECK
    VIDEO OUT   700 + – 50 mV

   ********************************************
<DEVICE>     : RAM1
<ADDRESS>    : 11E
<DATA>       : 1A — 1A

<MESSAGE>    :

<INSTRUCTION>     ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 4-26

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the terminated Oscilloscope with 75Ω to the Video Output Connector.
- Confirm that the Video Output signal level becomes 700 ± 50 mV as shown in Fig. 4-25.

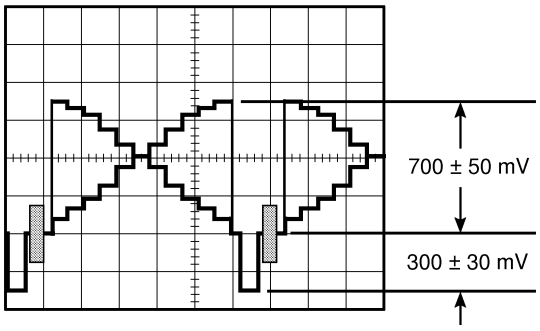


Fig. 4-25

- Press the **ENTER** key for next adjustment.

(24).4.5.(B). Pedestal Level Confirmation

Test Point: Video Output Connector

- The menu as shown in Table 4-27 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************** EVR ******************** PAL

 4.5.(B) BLC LEVEL
    VIDEO OUT PEDESTAL  50 + – 5 mV

   ********************************************
<DEVICE>     : RAM0
<ADDRESS>    : 0B2
<DATA>       : 0F – 0F
               :
<MESSAGE>    :

<INSTRUCTION> ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 4-27

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the terminated Oscilloscope with 75Ω to the Video Output Connector.
- Close the Lens Iris.
- Confirm that the Pedestal level becomes 50 ± 5 mV as shown in Fig. 4-26.

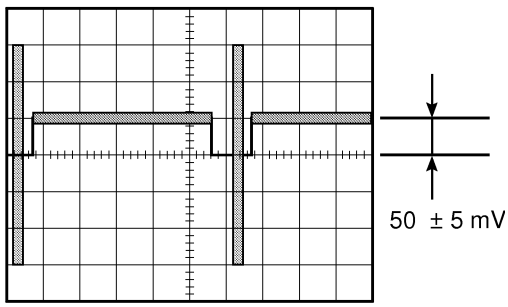


Fig. 4-26

- Press the **ENTER** key for next adjustment.

(25).4.5.(C). Knee Level Confirmation

Test Point: Video Output Connector

- The menu as shown in Table 4-28 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************** EVR ******************** PAL

 4.5.(C). KNEE LEVEL CHECK
    VIDEO OUT  805  – 0 + 35 mV

   ********************************************
<DEVICE>     : RAM0
<ADDRESS>    : 0B2
<DATA>       : 0F – 0F
               :
<MESSAGE>    :

<INSTRUCTION> ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 4-28

- Aim the Camera at the White Chart.
- Connect the terminated Oscilloscope with 75Ω to the Video Output Connector.
- Open the Lens Iris.
- Confirm that the Knee level becomes 805 mV as shown in Fig. 4-27.

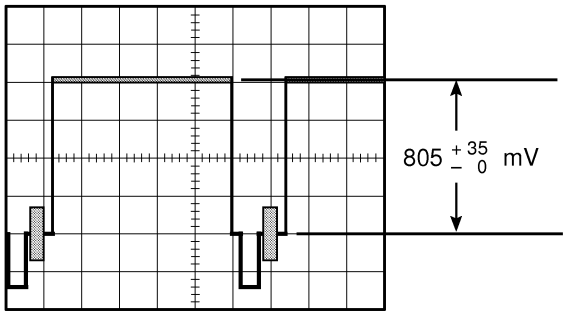


Fig. 4-27

- Press the **ENTER** key for next adjustment.

(26).4.5.(2). Low Light Level Confirmation

Test Point: Video Output Connector

- The menu as shown in Table 4-29 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************* EVR ****************** PAL

 4.5.(2). LOW LIGHT LEVEL CHECK
   VIDEO OUT   280 + – 35 mV

  ******************************************
<DEVICE>     : RAM1
<ADDRESS>    : 11D
<DATA>       : 24 – 24

<MESSAGE>    :

<INSTRUCTION>     ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 4-29

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the terminated Oscilloscope with 75Ω to the Video Output Connector.
- Change the lighting from 2,750 lx to 3 lx.
- Confirm that the Video signal level becomes 280 ± 35 mV as shown in Fig. 4-28.

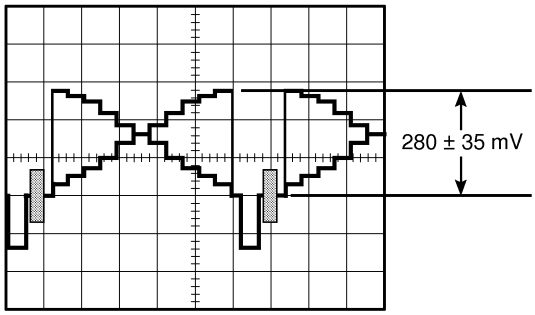


Fig. 4-28

- Return the lighting from 3 lx to 2,750 lx.
- Press the **ENTER** key for next adjustment.

(27).5.2.(1). Manual Iris 1 Confirmation

Adjust: DSP (376) Digital Board

- The menu as shown in Table 4-30 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************* EVR ****************** PAL

 5.2.(1). MANUAL IRIS 1


  ******************************************
<DEVICE>     : DSP
<ADDRESS>    : 376
<DATA>       : 04 — 04

<MESSAGE>    :

<INSTRUCTION> ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 4-30

- Confirm that the Lens Iris should be Closed.
- Press the **ENTER** key for next adjustment.

(28).5.2.(2). Manual Iris 2 Adjustment

Adjust: RAM (3E0) Digital Board

- The menu as shown in Table 4-31 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************* EVR ****************** PAL

 5.2.(2). MANUAL IRIS 2


  ******************************************
<DEVICE>     : RAM3
<ADDRESS>    : 3E0
<DATA>       : 6F — 6F
               :
<MESSAGE>    :

<INSTRUCTION> ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 4-31

- Confirm that the Lens Iris should be Open.
- Press the **ENTER** key for next adjustment.

(29).6.1.(A).1. Burst Level, Phase Adjustment

Test Point: Video Output Connector

Adjust: RAM (037) Digital Board

- The menu as shown in Table 4-32 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************* EVR ****************** PAL

 6.1.(A).1. BURST LEVEL, PHASE
   VIDEO OUT  300 + – 10 mV,  90 DEG

  ******************************************
<DEVICE>     : RAM0
<ADDRESS>    : 0B7
<DATA>       : 19 — 19
               :
<MESSAGE>    :

<INSTRUCTION> ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 4-32

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the terminated Oscilloscope with 75Ω to the Video Output Connector.

- Adjust data with the **ARROW** keys so that the Video Output signal level becomes 300 ± 10 mV as shown in Fig. 4-29.

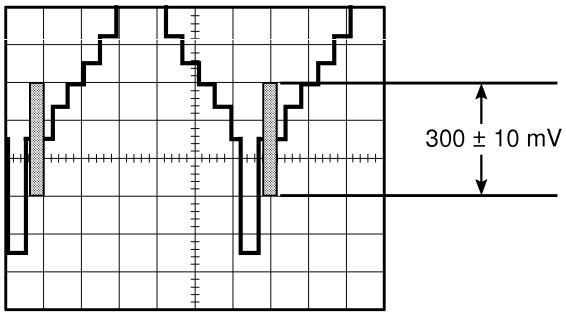


Fig. 4-29

- Press the **ENTER** key for next adjustment.

(30).6.1.(A).2. Burst Level, Phase Adjustment

Test Point: **Video Output Connector**

Adjust: **RAM (0B8)** **Digital Board**

- The menu as shown in Table 4-33 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************** EVR ****************** PAL

 6.1.(A).2. BURST LEVEL, PHASE
    VIDEO OUT  300 + – 10 mV,  90 DEG

   ******************************************
<DEVICE>      : RAM0
<ADDRESS>     : 0B8
<DATA>        : 19 — 19
                :
<MESSAGE>     :

<INSTRUCTION> ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 4-33

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Set the Mode Switch of the Vectorscope to the "NTSC" mode.
- Adjust data with the **ARROW** keys so that the Burst Phase becomes 135 ± 1° as shown in Fig. 4-30.
- Change the Mode Switch of the Vectorscope from the "NTSC" mode to the "PAL" mode.
- Adjust data with the **ARROW** keys so that the Burst Phase becomes 90 ± 2° as shown in Fig. 4-30.

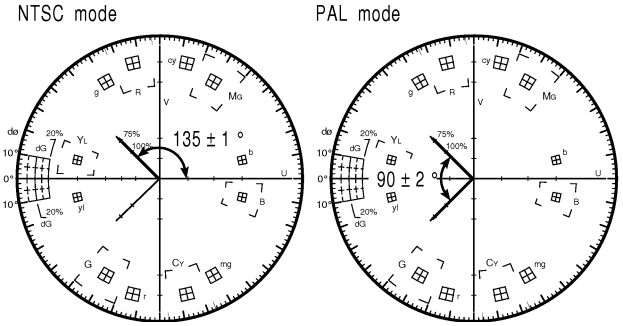


Fig. 4-30

- Press the **ENTER** key for next adjustment.
- Repeat adjust from (29).6.1.(A).1. to (30).6.1.(A).2. until both Burst Phase and Gain are adjusted to proper position as shown in Fig. 4-29 and Fig 4-30.

(31).6.1.(B). Chroma Phase Adjustment

Test Point: **Video Output Connector**

Adjust: **RAM (0F4)** **Digital Board**

- The menu as shown in Table 4-34 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************** EVR ****************** PAL

 6.1.(B). CHROMA PHASE
    VIDEO OUT

   ******************************************
<DEVICE>      : RAM14
<ADDRESS>     : E07
<DATA>        : 19 — 19
                :
<MESSAGE>     :

<INSTRUCTION> ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 4-34

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Set the Gain Control of the Vectorscope to the Normal position.
- Adjust data with the **ARROW** keys so that both Red vectors match (0 ± 1°).
- Press the **ENTER** key for next adjustment.

(32).6.2.(A).1. R White Balance 3200K Manual Offset Adjustment

Test Point: **Video Output Connector**

Adjust: **RAM (0F4)** **Digital Board**

- The menu as shown in Table 4-35 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************** EVR ****************** PAL

 6.2.(A).1. WB 3200K MANU OFFSET R
    VIDEO OUT  < = 20 mV

   ******************************************
<DEVICE>      : RAM0
<ADDRESS>     : 0F4
<DATA>        : 58 — 58

<MESSAGE>     :

<INSTRUCTION> ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 4-35

- Set the Gain Control of the Vectorscope to maximum.
- Aim the Camera at the White Chart or White Paper.
- Adjust data with the **ARROW** keys so that the vector positions at the center of the Vectorscope as shown in Fig. 4-31.

Positions at center.

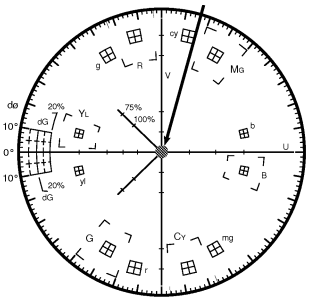


Fig. 4-31

- Press the **ENTER** key for next adjustment.

(33).6.2.(A).2. B White Balance 3200K Manual Offset Adjustment

Test Point: Video Output Connector

Adjust: RAM (0F5) **Digital Board**

- The menu as shown in Table 4-36 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************* EVR ******************** PAL

 6.2.(A).2. W B 3200K MANU OFFSET B
    VIDEO OUT  < = 20 mV

   ********************************************
<DEVICE>     : RAM0
<ADDRESS>    : 0F5
<DATA>       : 56 — 56
               :
<MESSAGE>    :

<INSTRUCTION> ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 4-36

- Aim the Camera at the White Chart or White Paper.
- Adjust data with the **ARROW** keys so that the vector positions at the center of the Vectorscope as shown in Fig. 4-32.

Positions at center.

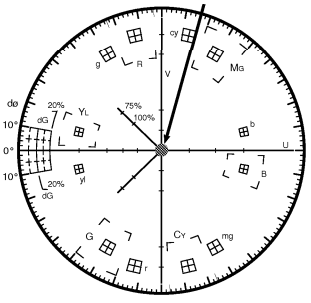


Fig. 4-32

- Repeat adjust from (33).6.2.(A).1. to (34).6.2(A).2. until the vector positions at the center of the Vectorscope.
- Press the **ENTER** key for next adjustment.

(34).6.2.(B).1. R White Balance 5100K ATW Limit Adjustment

Test Point: Video Output Connector

Adjust: RAM (0FA) **Digital Board**

- The menu as shown in Table 4-37 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************* EVR ******************** PAL

 6.2. (B).1. WB 5100K ATW LIMIT R
    VIDEO OUT  < = 20 mV

   ********************************************
<DEVICE>     : RAM0
<ADDRESS>    : 0FA
<DATA>       : 8C — 8C
               :
<MESSAGE>    :

<INSTRUCTION> ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 4-37

- Aim the Camera at the White Chart or White Paper.
- Change the Colour Temperature from 3,200 °K to 5,100 °K.
- Adjust data with the **ARROW** keys so that the vector positions at the center of the Vectorscope as shown in Fig. 4-33.

Positions at center.

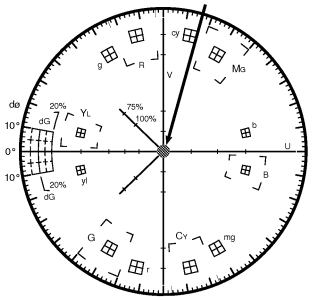


Fig. 4-33

- Press the **ENTER** key for next adjustment.

(35).6.2.(B).2. B White Balance 5100K ATW Limit Adjustment

Test Point: Video Output Connector

Adjust: RAM (0FB) **Digital Board**

- The menu as shown in Table 4-38 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************* EVR ******************** PAL

 6.2.(B).2. WB 5100K ATW LIMIT B
    VIDEO OUT  < = 20 mV

   ********************************************
<DEVICE>     : RAM0
<ADDRESS>    : 0FB
<DATA>       : 26 — 26

<MESSAGE>    :

<INSTRUCTION>     ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 4-38

- Aim the Camera at the White Chart or White Paper.
- Adjust data with the **ARROW** keys so that the vector positions at the center of the Vectorscope as shown in Fig. 4-34.

Positions at center.

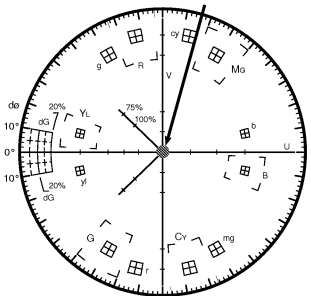


Fig. 4-34

- Repeat adjust from (34).6.2.(B).1. to (35).6.2.(B).2. until the vector positions at the center of the Vectorscope.
- Press the **ENTER** key for next adjustment.

(36).6.3.(A).1. 3200K R_Gain Adjustment

Test Point: Video Output Connector

Adjust: RAM (0F8) Digital Board

- The menu as shown in Table 4-39 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************** EVR ******************** PAL

 6.3.(A).1. 3200K R_GAIN
    VIDEO OUT

   ********************************************
<DEVICE>      : RAM0
<ADDRESS>     : 0F8
<DATA>        : 8C — 8C

<MESSAGE>     :

<INSTRUCTION> ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 4-39

- Aim the Camera at the Colour Chip Chart.
- Set the Gain Control of the Vectorscope to the Normal position.
- Return the Colour Temperature from 5,100 °K to 3,200 °K.
- Adjust data with the **ARROW** keys so that the Red gain becomes 220 ± 5 % (Burst level = 100%).
- Press the **ENTER** key for next adjustment.

(37).6.3.(B). 3200K B_Gain Adjustment

Test Point: Video Output Connector

Adjust: RAM (0F9) Digital Board

- The menu as shown in Table 4-40 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************** EVR ******************** PAL

 6.3.(B). 3200K B_GAIN
    VIDEO OUT

   ********************************************
<DEVICE>      : RAM0
<ADDRESS>     : 0F9
<DATA>        : 8B — 8B
                :
<MESSAGE>     :

<INSTRUCTION> ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 4-40

- Adjust data with the **ARROW** keys so that the Yellow gain becomes 120 ± 5 % (Burst level = 100%).
- Press the **ENTER** key for next adjustment.

(38).6.3.(C). 3200K R_Matrix Adjustment

Test Point: Video Output Connector

Adjust: RAM (0B8) Digital Board

- The menu as shown in Table 4-41 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************** EVR ******************** PAL

 6.3.(C). 3200K R_MATRIX
    VIDEO OUT

   ********************************************
<DEVICE>      : RAM0
<ADDRESS>     : 0B8
<DATA>        : 40 — 40

<MESSAGE>     :

<INSTRUCTION> ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 4-41

- Adjust data with the **ARROW** keys so that the Red Vector Phase becomes 110 ± 2 °.
- Repeat adjust from (36).6.3.(A).1. to (38).6.3.(C). until both Chrominance Phase and Gain are adjusted to proper position as shown in Fig. 4-35 and Table 4-42.

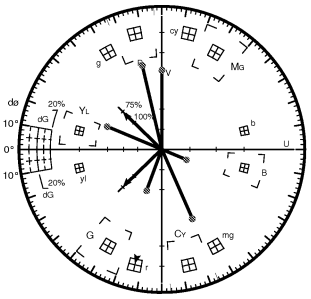


Fig. 4-35

	Red	Yellow	(Cyan)
Phase	110 ± 2 °	160 ± 5 °	290 ± 8 °
Gain	220 ± 5 %	120 ± 5 %	160 ± 10 %

Table 4-42

- Press the **ENTER** key for next adjustment.

(39).6.4.(A). 5100K R_Gain Adjustment

Test Point: **Video Output Connector**

Adjust: **RAM (0DC)** **Digital Board**

- The menu as shown in Table 4-43 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************* EVR ******************** PAL

 6.4.(A). 5100K R_GAIN
    VIDEO OUT

   ********************************************
<DEVICE>     : RAM0
<ADDRESS>    : 0DC
<DATA>       : 79 — 79
               :
<MESSAGE>    :

<INSTRUCTION> ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)       QUIT(F3)       SAVE(F5)
```

Table 4-43

- Change the Colour Temperature from 3,200 °K to 5,100 °K.
- Adjust data with the **ARROW** keys so that the Red gain becomes 220 ± 5 % (Burst level = 100%).
- Press the **ENTER** key for next adjustment.

(40).6.4.(B). 5100K B_Gain Adjustment

Test Point: **Video Output Connector**

Adjust: **RAM (0DE)** **Digital Board**

- The menu as shown in Table 4-44 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************* EVR ******************** PAL

 6.4.(B). 5100K B_GAIN
    VIDEO OUT

   ********************************************
<DEVICE>     : RAM0
<ADDRESS>    : 0DE
<DATA>       : DF — DF
               :
<MESSAGE>    :

<INSTRUCTION> ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)       QUIT(F3)       SAVE(F5)
```

Table 4-44

- Adjust data with the **ARROW** keys so that the Yellow gain becomes 100 ± 5 % (Burst level = 100%).
- Repeat adjust from (40).7.3.(B).1. to (41).7.3.(B).2. until both Chrominance Phase and Gain are adjusted to proper position as shown in Fig. 4-36 and Table 4-45.

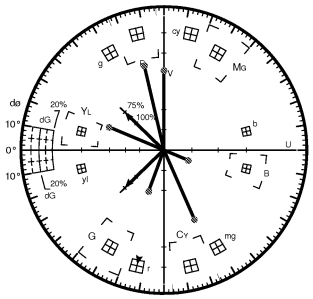


Fig.. 4-36

	Red	Yellow	(Cyan)
Phase	110 ± 2 °	160 ± 5 °	290 ± 8 °
Gain	220 ± 5 %	100 ± 5 %	160 ± 10 %

Table 4-45

- Press the **ENTER** key for next adjustment.

(41).6.5. Highlight Chroma Clip Adjustment

Test Point: **Video Output Connector**

Adjust: **RAM (09F)** **Digital Board**

- The menu as shown in Table 4-46 will be displayed.

```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************* EVR ******************** PAL

 6.5. HIGHLIGHT CHROMA CLIP
    VIDEO OUT

   ********************************************
<DEVICE>     : RAM0
<ADDRESS>    : 09F
<DATA>       : FA — FA

<MESSAGE>    :

<INSTRUCTION>     ADJUST DATA BY ARROW-KEY.  ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)       QUIT(F3)       SAVE(F5)
```

Table 4-46

- Aim the Camera at the White Chart or White Paper.
- Return the Colour Temperature from 5,100 °K to 3,200 °K.
- Adjust data with the **ARROW** keys so that the false chrominance level becomes minimum as shown in Fig. 4-37.

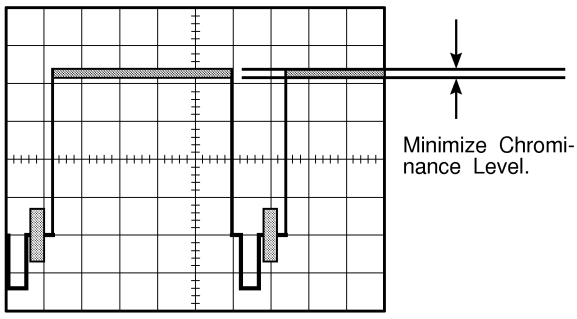


Fig. 4-37

- Press the **ENTER** key for next adjustment.

- After completing of the adjustment, press the **QUIT (F3)** key, then the menu as shown in Table 4-47 will be displayed.

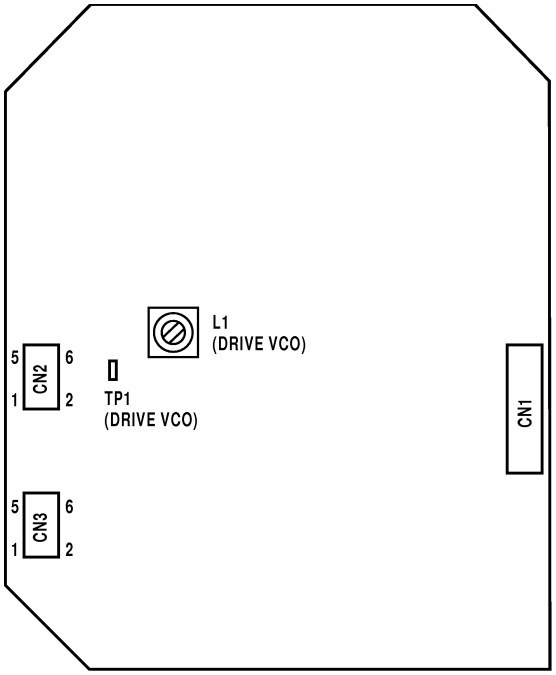
```
PANASONIC EVR ADJUSTMENT SYSTEM  (C)MCI Co.  CCTV PRODUCT: CS600  EEPROM: 0
********************** EVR ******************** PAL

 6.5. HIGHLIGHT CHROMA CLIP
    VIDEO OUT

   ********************************************
<DEVICE>     : RAM0
<ADDRESS>    : 09F
<DATA>       : FA — FA

<MESSAGE>    :

< SAVE CAMERA DATA TO FILE:      EVR ?  Y/N  >
  LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 4-47

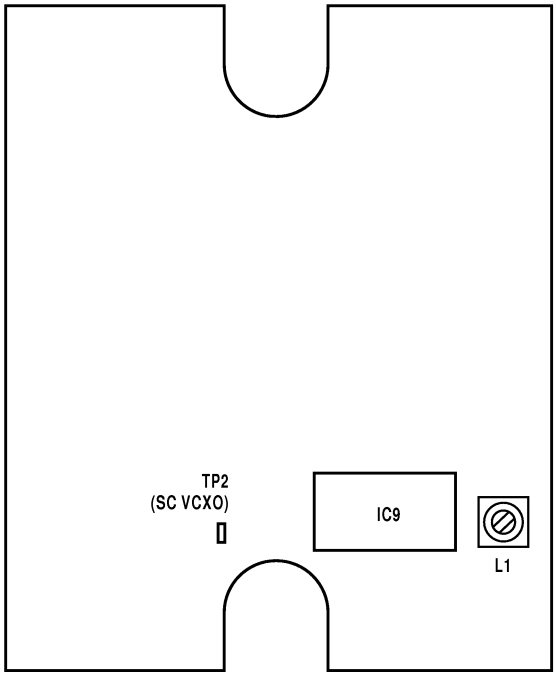
- Press the **N** key, and then press the **ENTER** key to finish of this adjustment procedure.
- Disconnect the cable from CN3 on the Digital Board.

LOCATION OF TEST POINTS AND ADJUSTING CONTROLS

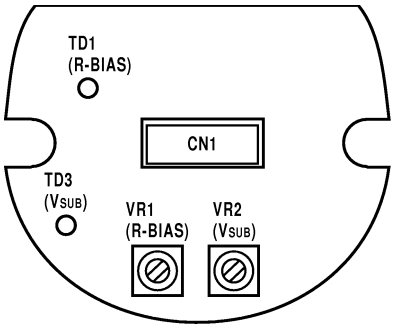
DRIVE BOARD (COMPONENT SIDE)



DIGITAL BOARD (COMPONENT SIDE)

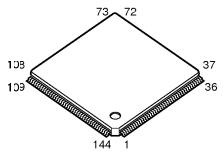


SENSOR BOARD (PATTERN SIDE)

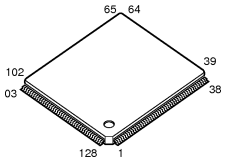


APPEARANCE OF IC, TRANSISTOR AND DIODE

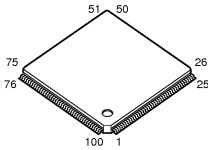
YWL7A1220



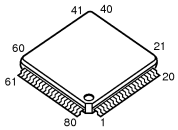
YWCF45811PGJ



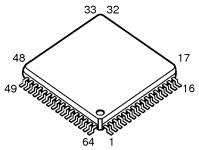
YWTMP93PS40F
YWL7A1219



YW7702P4L466
MN673211M2U



YWTC9074FL
YWCXD2404R



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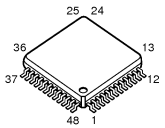
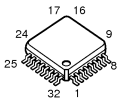
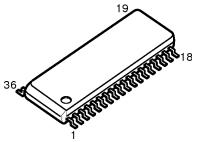
YWUPD65612Y45



AN2034FAP
MN6576



YWUPC664GS



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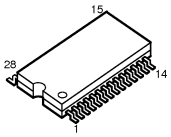
MN4792S



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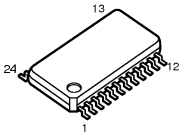

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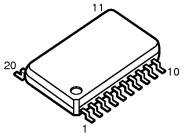
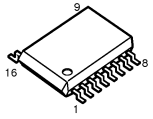
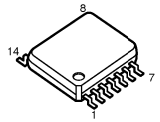
YWMB88346BEF YWC5020074E1
MN3112SA



YWTC4051BFSL
YWNJM2123V
YWMB3775PFV



YWNJM2902VT1 YWTC74AT04F
YWNJM3403AM YWTC74VC04FS
YWTL064CPWEL YWTC74VC32F



YWBR9020FE1 YWM5222FP6C
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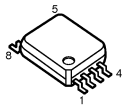
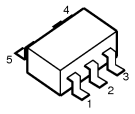
YWNJM2904D AN2018S
YWNJM3416 YWTC7W125FUL
YWX2516SI27T



YWTC4S66FL YWTC7SU32F
YWNJM2406F YWTC7S02F
YWTC7S04FUL YWTC7SU04FUL



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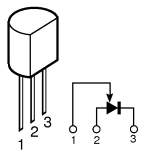
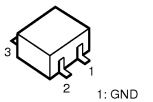
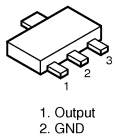


MN13821



AN8005



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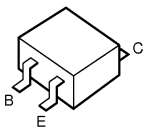
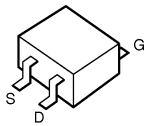
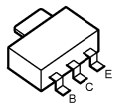
2SB1218A-QR



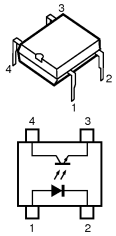
2SK1069



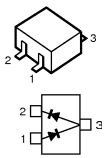
2SB766A-QR



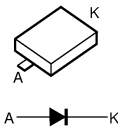
YWPS2501-1KA



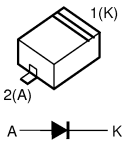
MA133



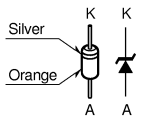
MA732
MA8039



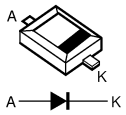
YWSC80206L



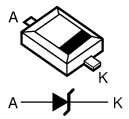
YWUDZ3.6B
YWUDZ2.2B
YWUDZ6.2B



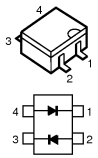
YW1SS355
MA112
MA729



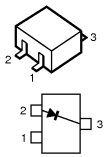
MA8091M
MA8220



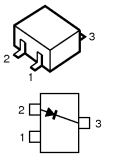
MA726



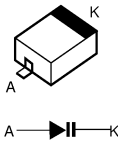
YWDA121



YWDA221



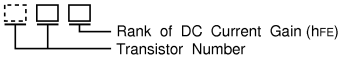
YWHVU359TRF



CHIP COMPONENTS

1. Chip Transistor

The transistor number is indicated on the top surface of the chip transistor using two alphabet letters or one numerical number and two alphabet letters.



Transistor Number

(Chip Transistor)

Letter	Transistor No.	Letter	Transistor No.
A	2SB709	X	2SD602A
B	2SB709A	Y	2SD601
C	2SB710	Z	2SD601A
D	2SB710A	1A	2SB799
E	2SA1022	1B	2SB814
F	2SA1034	1C	2SB902
H	2SA1035	1F	2SK321
I	2SB792	1K	2SK316
K	2SC2778	1L	2SK247
P	2SD814	1M	2SJ84
Q	2SD813	1N	2SK199
R	2SC2480	1O	2SK198
S	2SC2405	1T	2SC3077
T	2SC2406	1X	2SC2845
U	2SC2404	1Z	2SD1030
V	2SC2295	2B	2SK374
W	2SD602	2C	2SK116
BQ	2SB766A	UMT	2SC4081

(Small Chip Transistor)

Letter	Transistor No.
A	2SB1218
B	2SB1218A
D	2SB1219A
U	2SC3931
W	2SD1820
X	2SD1820A
Y	2SD1819
E3	2SA1226
OS	2SB1219
UC	2SA1532
YU	2SC3938

(Pair Transistor)

Letter	Transistor No.	Letter	Transistor No.
5R	XN1501	5H	XP4501
7S	XN1601	5C	XP4601
5H	XN4501	5H	XP4501
5C	XN4601	5L	XP5501
5L	XN5501	4N	XP5601
4N	XN5601	7S	XP6501
5N	XN6501	7W	XP6435
7W	XN6435	7F	XP6534
7F	XN6534	X1	UMX1
5R	XP1501	Z1	UMZ1
7S	XP1601		

Example: WQ → 2SD602-Q
YQ → 2SD601-Q
1BS → 2SB814-S

Appearance and Symbols

Transistor

C: Collector
B: Base
E: Emitter

FET

	1	2	3
Eacept 2SK199	Drain	Source	Gate
2SK199	Gate	Drain	Source

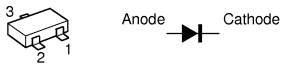
2. Chip Diode

The diode number is indicated on the top surface of the chip diode using two alphabet letters.

Diode Number

Letter	Diode No.	Letter	Diode No.
MA	MA151A	MI	MA152K
MB	MA152A	MK	MA28W-B
MC	MA153	ML	MA28T-A
MD	MA28-A	MN	MA151WA
ME	MA28-B	MO	MA152WA
MF	MA28W-A	MT	MA151WK
MH	MA151K	MU	MA152WK
MH	MA141K	6.2	MA3062
MC	MA143	SMD	RD421D

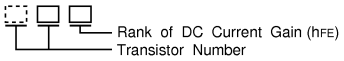
Appearance and Symbols



	1	2	3
MA28/MA28W/MA28T	–	Anode	Cathode
MA151K/MA152K	–	Anode	Cathode
MA151A/MA152A	–	Cathode	Anode
MA151WK/MA152WK	Anode	Anode	Cathode
MA151WA/MA152WA	Cathode	Cathode	Anode
MA153	Cathode	Anode	Common
MA141K	–	Anode	Cathode
MA143	Anode	Cathode	Common
MA3062	Anode	–	Cathode
RD421D	Anode	–	Cathode

3. Chip Resistor

The resistor value is indicated on the bottom surface of the chip resistor using three digit numbers.



Example:

330 → $33 \times 10^0 = 33\ \Omega$
561 → $56 \times 10^1 = 560\ \Omega$
123 → $12 \times 10^3 = 12\ k\Omega$

Note: Zero ohm resistor (jumper chip) is colored red or green.

4. Chip Capacitor

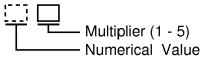
The capacitive value of replacement chip capacitors is indicated on the bottom surface. Original parts have no value indication.

If the capacitive value is less than 100 pF, the value will be indicated by one or two digit number expressing the capacity directly in pF.

Example:

0.5 → 0.5 pF 2.5 → 2.5 pF
.75 → 0.75 pF 33 → 33 pF
1 → 1 pF 82 → 82 pF

If the capacitive value is 100 pF or greater, the value will be indicated by an alpha-numeric code. The letter precedes the number and expresses a numerical value to be multiplied by the number which follows.



Numerical Value

Letter	Value	Letter	Value
A	10	N	33
B	11	P	36
C	12	Q	39
D	13	R	43
E	15	S	47
F	16	T	51
G	18	U	56
H	20	V	62
J	22	W	68
K	24	X	75
L	27	Y	82
M	30	Z	91

* Letters I and O are not used.

Example: A1 → $10 \times 10^1 = 100$ pF
N2 → $33 \times 10^2 = 3300$ pF
S3 → $47 \times 10^3 = 47000$ pF

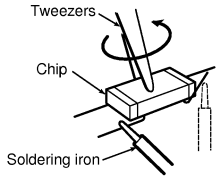
5. Precautions in replacing the chip component

1. Make sure that the unit is turned OFF when replacing the chip.
2. Use tweezers to prevent any damage to the chip surface.
3. Do not re-use the chips after removal.
4. Do not rub the electrode of chips.
5. Do not subject the chips to excessive stress.
6. It is recommended that a pencil-type soldering iron to be used.
7. The solder whose diameter is less than 0.5 mm is recommended.
8. Do not heat the chip more than 3 seconds.
9. Maintain temperature control under 260°C (500°F) when soldering.

5-1. Removal (Transistor, Diode, Resistor and Capacitor)

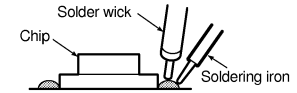
1. Add the solder to both ends of the chip (three leads for chip transistor).
2. While attaching the soldering iron to both ends of the chip (three leads for chip transistor) as shown below, remove the chip by turning with tweezers.

Note: Be careful not to damage other chips.

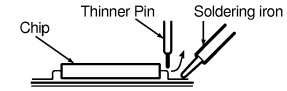


5-2. Removal (IC)

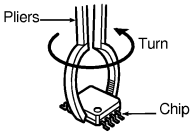
1. Add the solder wick and soldering iron to each lead of the IC and remove solder.



2. Add the soldering iron to each lead of the IC and left each lead of the IC using thinner pin.

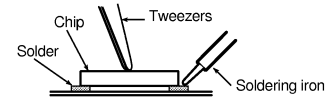


3. Remove the IC turning with pliers.

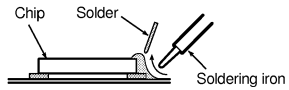


5-3. Mounting

1. Place the solder thinly on the chip mounting foil.
2. Solder the chip temporarily while holding the chip with the tweezers.

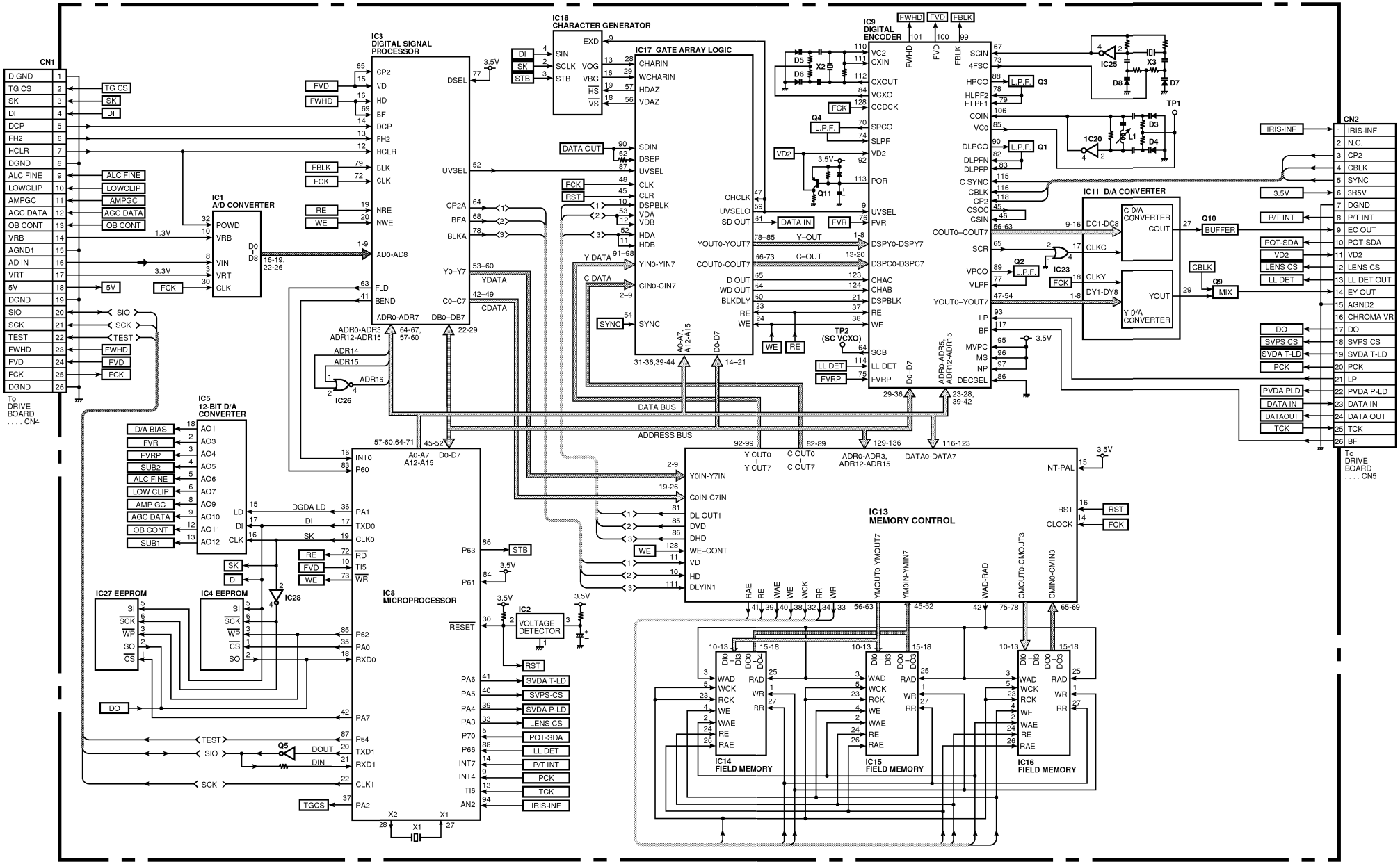


3. Solder both ends of the chip (three leads for chip transistor).

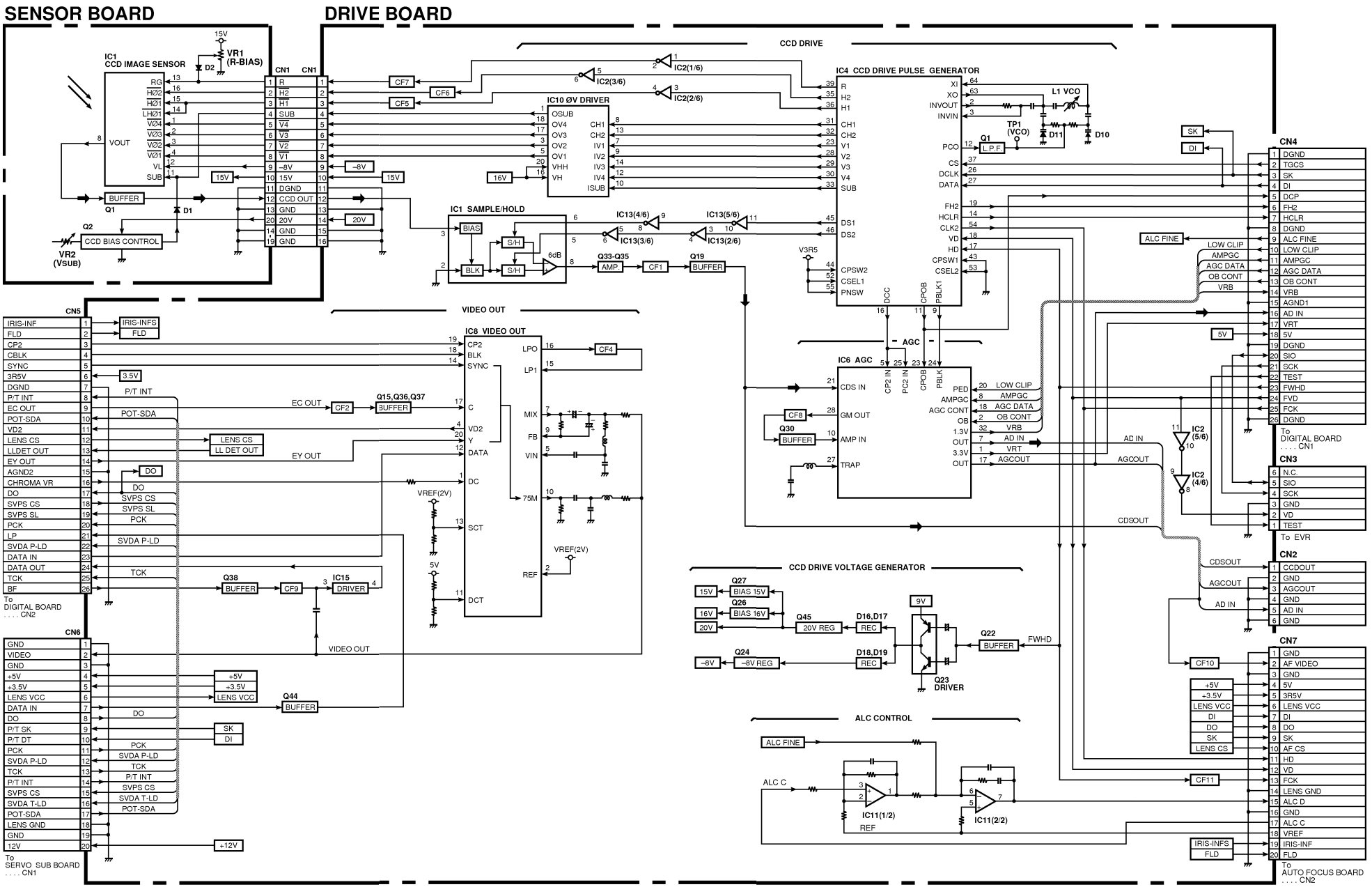


BLOCK DIAGRAM OF DIGITAL BOARD

DIGITAL BOARD

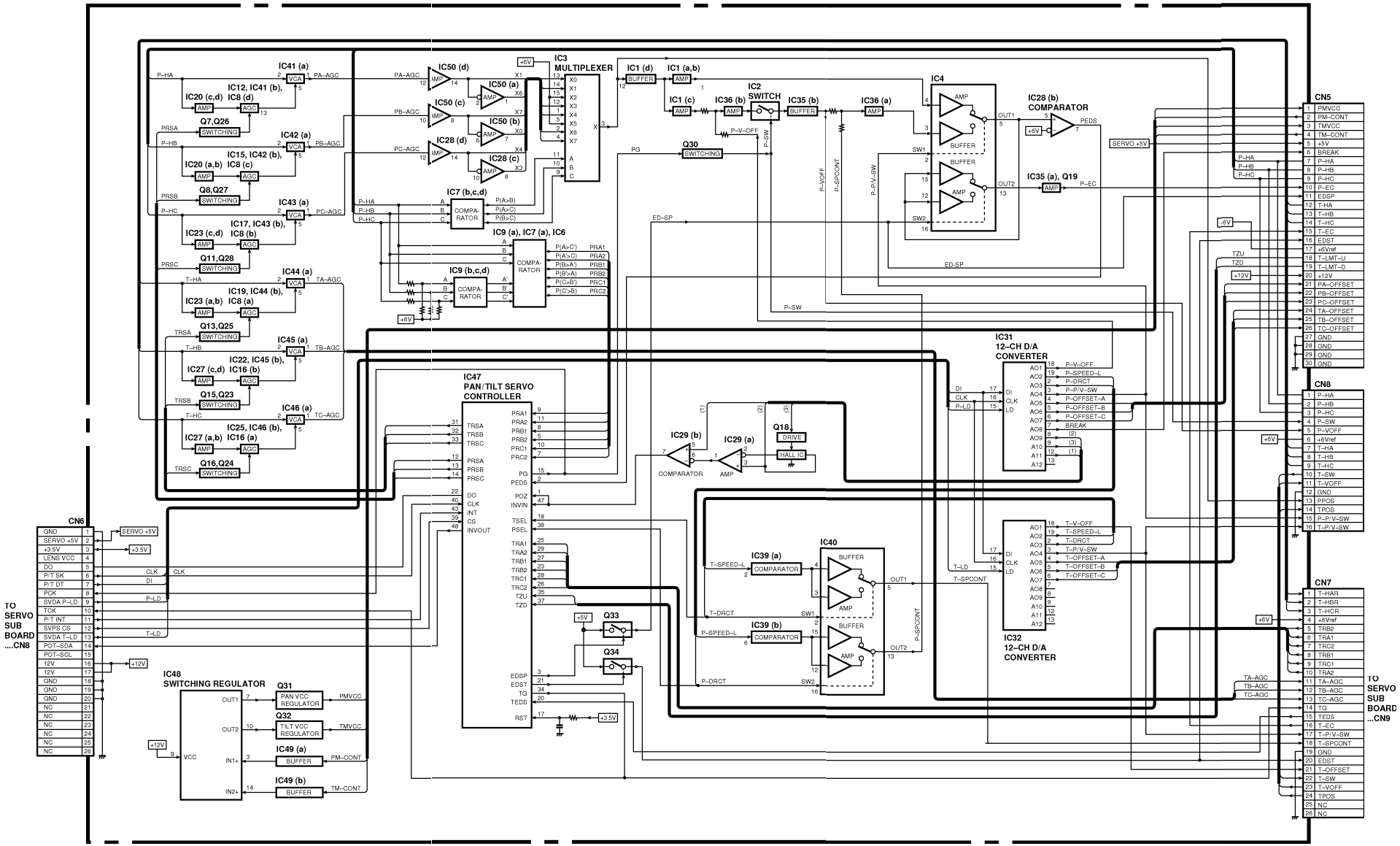


BLOCK DIAGRAM OF DRIVE BOARD

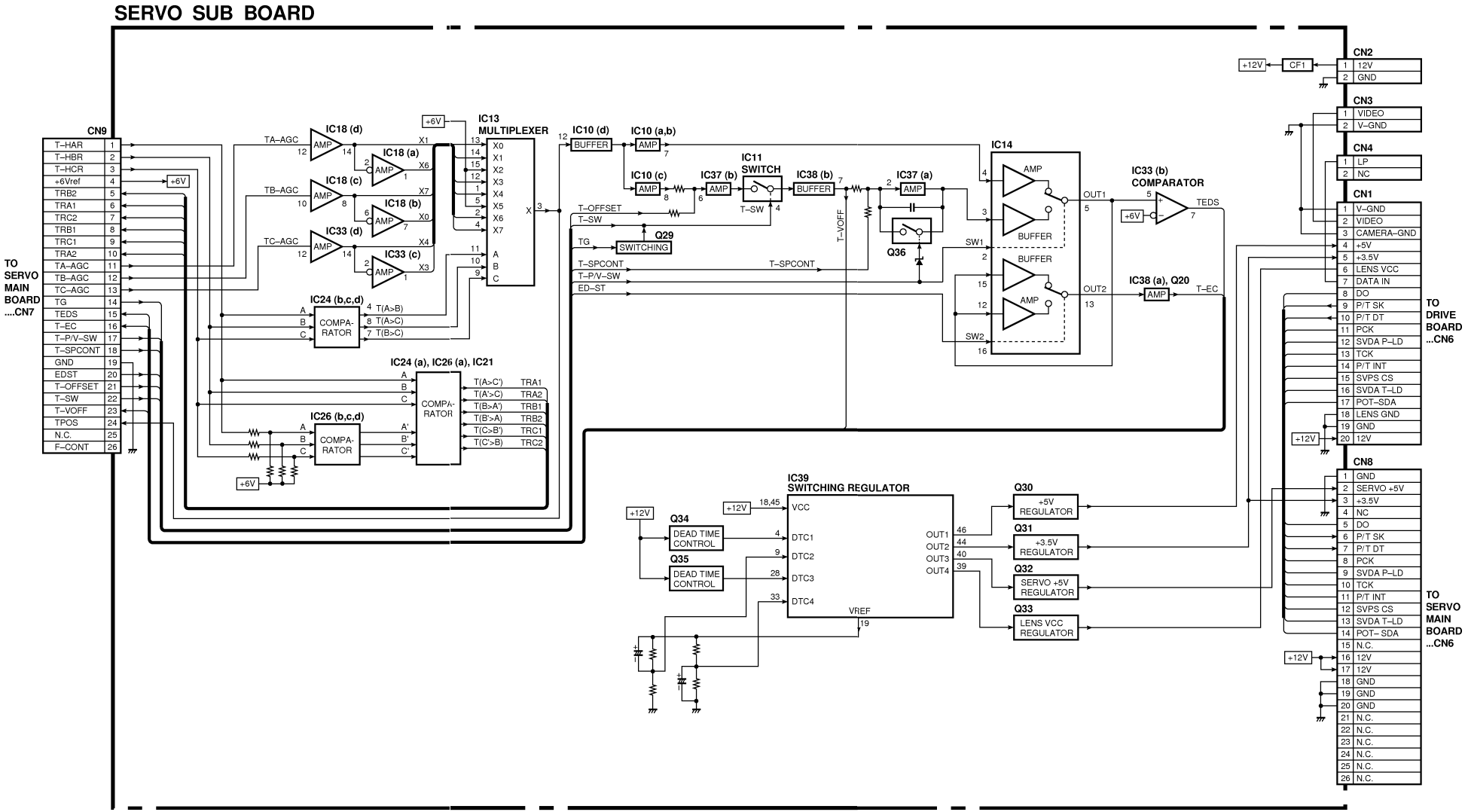


BLOCK DIAGRAM OF SERVO MAIN BOARD

SERVO MAIN BOARD

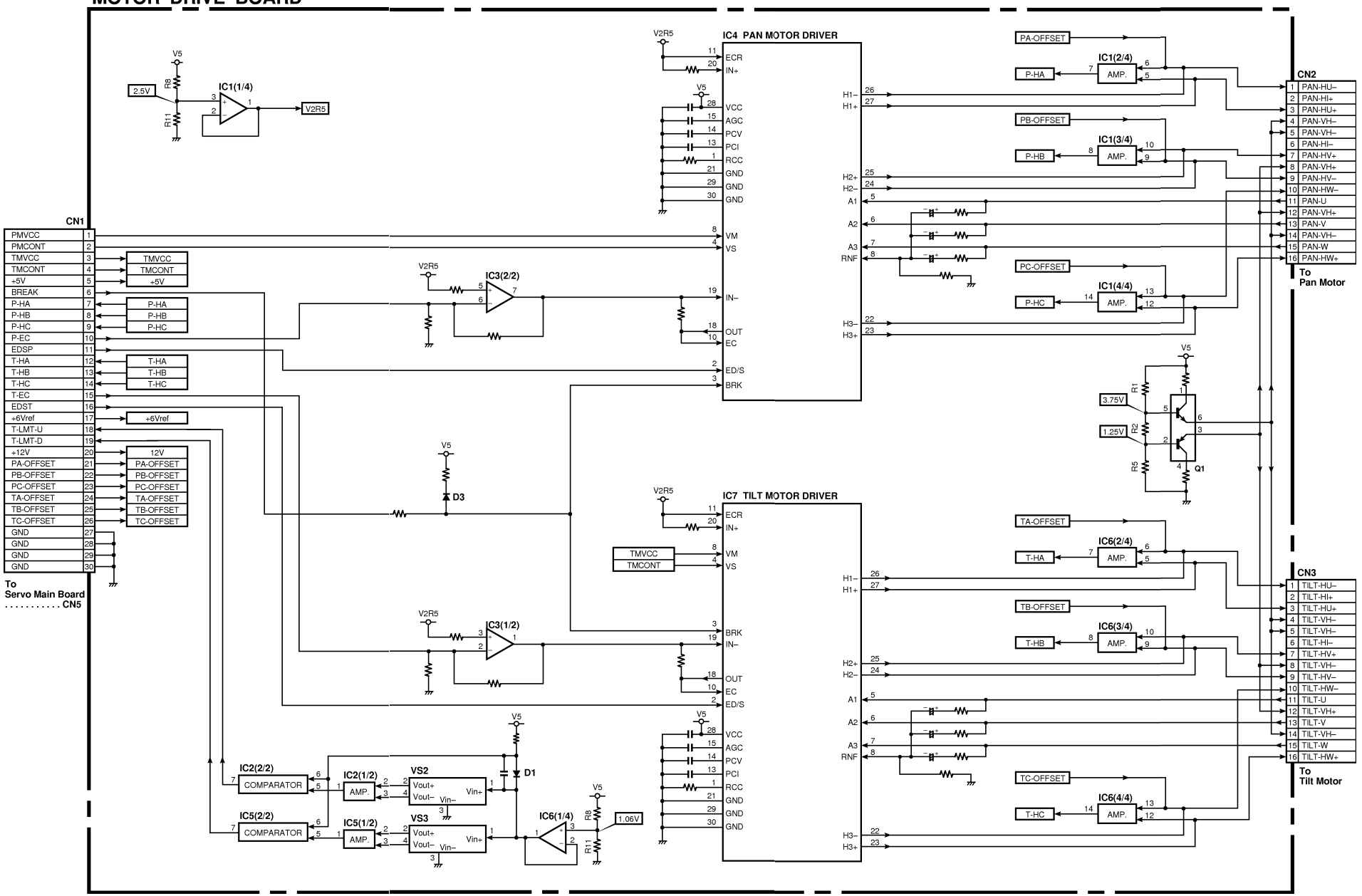


BLOCK DIAGRAM OF SERVO SUB BOARD



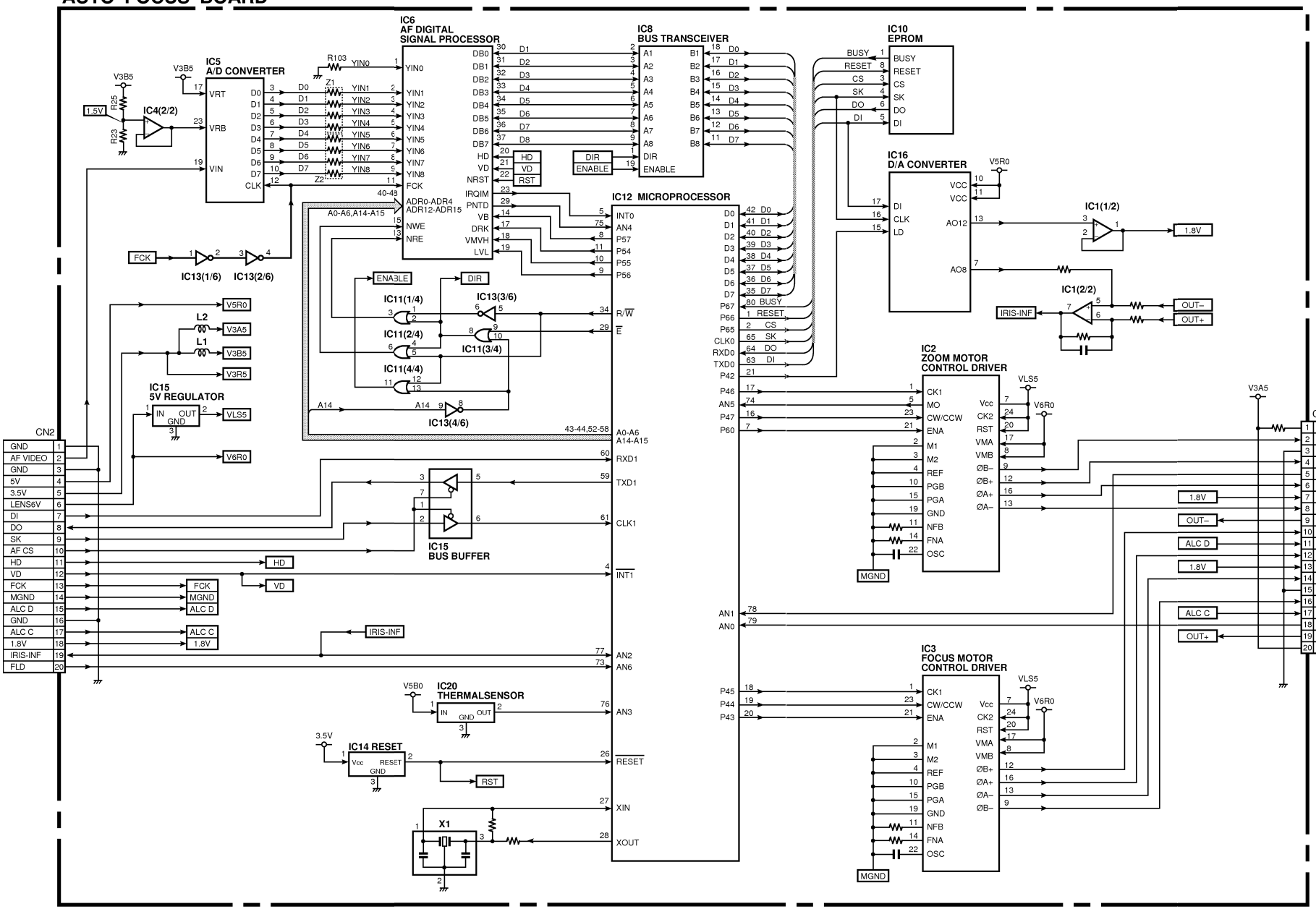
BLOCK DIAGRAM OF MOTOR DRIVE BOARD

MOTOR DRIVE BOARD



BLOCK DIAGRAM OF AUTO FOCUS BOARD

AUTO FOCUS BOARD



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